DTC-77ES/87ES

SERVICE MANUAL

US Model
DTC-87ES
AEP Model
UK Model
DTC-77ES



Photo: DTC-87ES

Model Name Using Similar Mechanism	New Mechanism
Tape Transport Mechanism Type	DATM-51

SPECIFICATIONS

Tape — Digital audio tape
Recording head — Rotary head
Recording time — Standard: 120 minutes.
Long-play mode: 240 minutes (with DT-120)
Tape speed — Standard: 8.15 mm/s,
Long play mode: 4.075 mm/s
Drum rotation — Standard: 2,000 rpm,
Long-play mode: 1,000 rpm
Error correction — Double Read Solomon code

Tape
Track pitch — 13.6 µm (20.4 µm)
Sampling frequency — 48 kHz, 44.1 kHz, 32 kHz
Modulation system — 8–10 Modulation
Transfer rate — 2.46 Mbit/sec.
Number of channel — 2 channels, stereo
D/A conversion (Quantization)
Standard: 16-bit linear
Long-play mode: 12-bit non-linear
Frequency response — Standard: 2–22,000 Hz (±0.5 dB)
Long-play mode: 2–14,500 Hz (±0.5 dB)

		DTC-77ES	DTC-87ES
Signal to noise ratio	SP	more than 93 dB	more than 94 dB
	LP		more than 93 dB
Dynamic range	SP	more than 93 dB	more than 94 dB
	LP		more than 93 dB
Total harmonic distortion (1 kHz)	SP	less than 0.0045%	less than 0.004%
	LP	less than 0.08%	less than 0.08%

* SP: standard-play mode
LP: Long-play mode

Wow and flutter — Below measurable limit (±0.001% W. PEAK)

– Continued on next page –

DIGITAL AUDIO TAPE DECK

SONY®

使用時は添付資料も参照のこと
Refer to the additional documents.

Input

	Jack type	Impedance	Rated input level
LINE IN	phono jack	47 kohms	–4 dBs
DIGITAL IN	phono jack	75 ohms	0.5 Vp-p, 20%
DIGITAL IN	optical jack	—	—

Output

	Jack type	Impedance	Rated output	Load impedance
LINE OUT	phono jack	470 ohms	–4 dBs	More than 10 kohms
PHONES	stereo phone jack	220 ohms	2.0 mW	32 ohms

DIGITAL OUT (optical jack): wavelength 660 nm

General

Power requirements: US model: 120 V AC, 60 Hz
AEP model: 220/230 V AC, 50/60 Hz
UK model: 240 V AC, 50/60 Hz

Power consumption: 37 W

Dimensions: US, AEP model:
Approx. 470 × 135 × 350 mm (w/h/d)
(18 5/8 × 5 3/8 × 13 7/8 inches)
UK model:
Approx. 430 × 135 × 350 mm (w/h/d)
(17 × 5 3/8 × 13 7/8 inches)

Weight: US, AEP model:
Approx. 11 kg (24 lb 5 oz)
UK model:
Approx. 10.2 kg (22 lb 8 oz)

Remote commander (supplied)

Remote control system: Infrared control
Power requirements: 3V DC, with two size AA (R6) batteries
Dimensions: Approx. 63x19x175 mm (w/h/d) (2 1/2 x 3/4 x 7 inches)
Weight: Approx. 130 g (4 oz) incl. batteries.

Supplied accessories

Sony batteries SUM-3(NS) (2)
Audio connecting cords (2 phono plugs - 2 phono plugs, stereo for line inputs and outputs) (2)
Screws (4)

Design and specifications subject to change without notice.

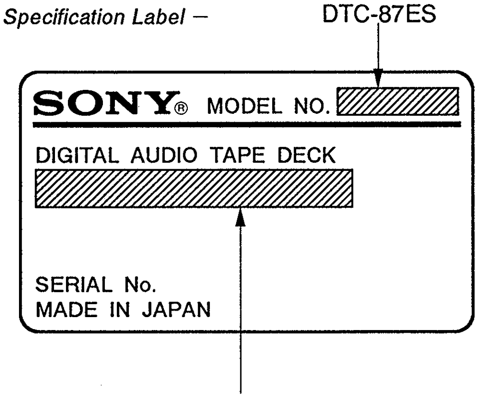
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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MODEL IDENTIFICATION DTC-77ES
– Specification Label – DTC-87ES



US Model: AC: 120V 60Hz
AEP Model: AC: 220 – 230V∼50/60 Hz
UK Model: AC: 240∼50/60 Hz

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

ADVARSEL !
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Lever det brugte batteri tilbage til leverandøren.

ADVARSEL

Lithiumbatteri – Eksplosjonsfare.
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

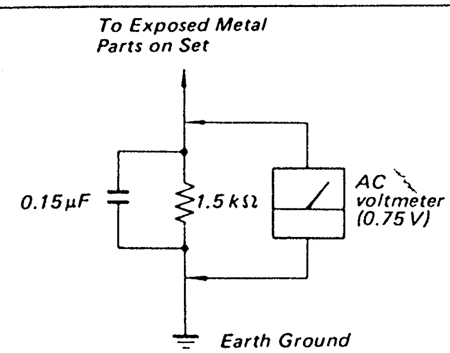


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Features

Serial copy management system

This unit utilizes the serial copy management system that permits digital-to-digital recording for one generation. You can record CD sound or other digital formats through a digital-to-digital connection.

4-Head, 4-DD Motor Mechanical Deck System

In addition to the standard two heads for recording and playback, this unit employs two additional heads for after-monitoring, forming a four-head system. This system allows after-monitoring of the recorded sound during recording in the same manner as with three-head cassette decks. In addition, the unit employs direct-drive motors for the drum, capstan, and reel drives, realizing silent and stable tape transport.

Date Function Automatically Records the Recording Date and Time

The year, month, day, day of the week, hour, minute and second are automatically recorded in the subcode area during recording, so that during playback you can display this data to check when the tape was recorded. This function is especially convenient when recording live performances, etc.

Three sampling frequencies

Recording/playback can be done with three sampling frequencies (48 kHz, 44.1 kHz and 32 kHz).
48 kHz: For analog and digital input signals in a standard mode.
44.1 kHz: For compact disc and pre-recorded DAT tape.
32 kHz: For analog input signals in a long-play mode.

Long Play mode

This unit can operate in a long-play mode. Analog input signals can be recorded or playback for up to four consecutive hours when the DT-120 DAT cassette tape is used. The sampling frequency will be 32 kHz in the long-play mode.

Visible cassette loading

You can view the tape operation through the lid of the cassette compartment.

Excellent sound quality

1-bit A/D converter
For the A/D converter section which converts analog input signals to digital signals, the unit employs a 1-bit A/D converter which theoretically generates no zero-cross distortion for a clear, elegant sound quality.
Pulse D/A converter
Superior playback performance is achieved through the combination of an 8X oversampling digital filter with a 1-bit D/A converter.
Independent Digital and Analog Power Sources
Since the design of the power source section is important for obtaining good sound quality, this unit incorporates two large-sized, large-capacity transformers for independently supplying power to the digital/mechanical deck sections and the analog section. This design eliminates from the source any interference introduced through the power supply.

Rich Variety of Subcode Information

This unit can record subcode information such as Start IDs, program numbers, Skip IDs, and absolute time data, enabling you to quickly locate tunes and display the playback time in the same manner as when playing compact discs.

High-Speed Search Function

Direct-drive reel motors and a software servo system enable you to locate tunes at high speeds up to 200-times the normal playback speed.

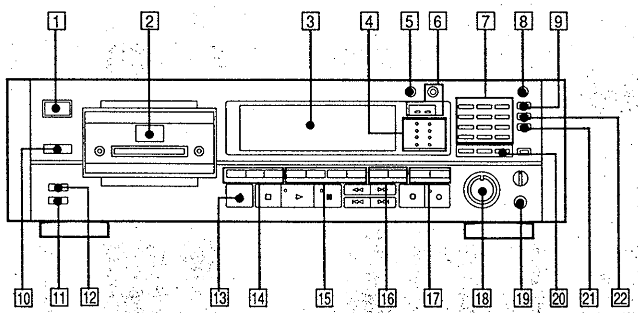
Digital fade-in/fade-out

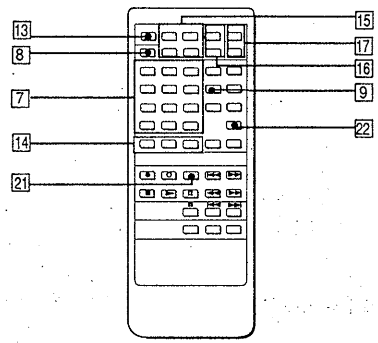
Professional sounding fade-in/fade-out of either digital or analog signals can be accomplished by use of the FADER button.

Post edit recording of sub codes

You can record or rewrite the following sub codes after the audio signal recording has been completed.
Start ID: Signifies the beginning of a selection.
Program number: Gives a number to the selection.
Skip ID: Signifies the beginning of a portion to be skipped.
End ID: Signifies the end position of recording/playback.
Since sub codes are written on the tape separately from audio signals, the audio signals are not affected.

Location and Function of Controls





Front Panel/Remote Commander

1 **POWER switch**
Turns the power on and off.

2 **Cassette compartment**
Insert a cassette with the window side up and the safety tab facing you.

3 **Display window**

4 **ID indicators**
Display which ID button is pressed.

5 **REC MODE selector**
Normally set to STANDARD.
When this selector is set to LONG, you can record analog input signals or digital signals with 32 kHz in the long-play mode.

6 **REC MONITOR switch and indicators**
Switch the output signals from the LINE OUT jack, DIGITAL OUT jack and PHONES jack during recording.
In the SOURCE mode, the signal being input is output.
In the TAPE mode, the signal to be recorded is output.

7 **Music select buttons**
Numeric buttons (0–9): Designate the desired program number to be played back before starting playback.
CLEAR: Use to cancel the program number which has been mistakenly entered.
MUSIC SCAN: Use this feature to listen to the beginning of each selection successively.

8 **DISPLAY MODE button**
Change the display mode. (Refer to page 10.)

9 **REPEAT button**
Press to play a desired portion repeatedly. Each time you press the button, the indication changes as follows:
REPEAT 1 → REPEAT ALL → Nothing

10 **Remote sensor**
Receives the signal from the Remote Commander.

11 **INPUT selector**
Set according to the signal to be recorded.
ANALOG: For recording from the equipment connected to the LINE IN jacks.
OPTICAL: For recording from the equipment connected to the DIGITAL IN (OPTICAL) jack.
COAXIAL: For recording from the equipment connected to the DIGITAL IN (COAXIAL) jack.

12 **TIMER switch**
Normally set to OFF. Use start recording or playback at the desired time using a commercially available audio timer.

13 **OPEN/CLOSE button**
Press when inserting or removing the cassette.

14 **COUNTER buttons**
MODE: Selects the counter display in the display window among the linear counter (tape running time), absolute time, elapsed time of the selection, and total remaining time of tape. Each time you press the button, the display changes sequentially.
RESET: Resets the linear counter to "0M 00S".
MEMORY: Press to search the position of the tape you want to listen to (Memory play, Memory stop).

15 **START ID buttons**
AUTO: Press to turn on and off the AUTO indicator. When the AUTO indicator is lit, the start ID will automatically be written during recording. When the AUTO indicator is not lit, press START ID WRITE at the point where you want to write a start ID.
WRITE: Press to write the start ID at the desired point during recording or playback.
ERASE: Press to erase a start ID. When a start ID and a program number are written on the tape, both codes are simultaneously erased by pressing this button.
RENUMBER: Press to renumber all programs on the tape. When only the start IDs are written, pressing this button will insert the proper program numbers beginning with "1". The tape will rewind and start from the beginning to accomplish this function.

16 **SKIP ID buttons**
WRITE: Press at the beginning of the portion you may wish to skip later. A skip ID will be written from the point where you pressed this button.
ERASE: Press to erase the nearest skip ID which is before the current position.

17 **END ID buttons**
WRITE: Press to write the ID signifying the end of playback or recording.
ERASE: Press to erase the end ID.

18 **REC LEVEL (recording level) controls**
Adjust the recording level for the analog input signals. The outer knob controls the L (left) channel level and the inner knob the R (right) channel level. The knobs can be adjusted together.
When recording digital signals, it is not necessary to adjust the recording level.

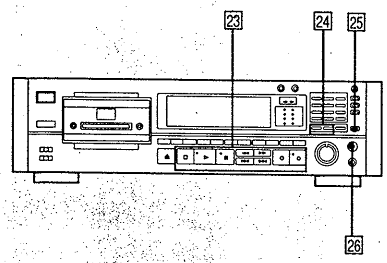
19 **PHONES jack**

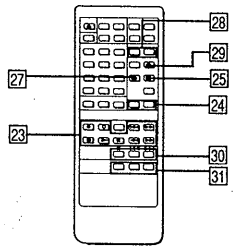
20 **CLOCK SET button**
Press to adjust the time of the clock built in this unit.
In this mode, The MUSIC SCAN button and the 0 button function as the + and – buttons respectively.

21 **FADER button**
Press to fade in or fade out during recording or playback.

22 **SKIP PLAY button**
Press to activate the skip ID code function. The portion of the tape previously marked will be skipped.

Location and Function of Controls





Front Panel/Remote Commander

23 **Tape operating buttons**
■(stop): Press to stop recording or playback.
►(play): Press to play back the tape.
● (recording): Press to start recording. After pressing this button, press II or ►.
II (pause): Press to stop for a moment during recording or playback. To restart recording or playback, press this button again or press ►.
If the unit is left in the pause mode for about 10 minutes, it will automatically be released and the deck will enter the stop mode. To restart recording or playback from the stop mode, press REC or ► respectively.
O (record muting): Inserts a sound-muted portion (space).
I◄◄/►►I (AMS): Press to locate the beginning of the selection during the playback.
◄◄/►► (rewind/review, fast-forward/cue): In the stop mode, press to rewind/fast-forward the tape. During playback, press to rewind or fast-forward the tape while listening to the sound.

24 **DATE button**
RECORDED: Press to display the recording day of the tape being played.
PRESENT: Press to display the current time.
Each time the RECORDED or PRESENT buttons are pressed, year, month, and day display or hour, minute and second display is switched respectively.

25 **MARGIN RESET button**
Press to reset the margin of peak level.

26 **PHONE LEVEL control**
The PHONE LEVEL control adjusts the headphones volume level.

27 **TIME SEARCH button**
Press to search the position of the tape you want to listen to by giving the time elapsed from the beginning of the tape.

28 **RMS play buttons**
ENTER: To program the selections in a desired order, press this button after pressing the numeric buttons.
CHECK: Press to check the programmed contents.

29 **REPEAT A↔B button**
Press to play back a desired portion repeatedly.

30 **CD operation buttons**
Operative only for the Sony CD player equipped with a Remote Commander.
II (pause): Sets the CD player in the pause mode during playback. Press again to release pause. If pressed twice when the player is in the stop mode, playback starts.
I◄◄/►►I (AMS): Press to locate the desired selection on the Compact Disc during playback or in the stop mode.

31 **CD SYNCHRO (CD synchronized recording) buttons**
(The playback of the CD player equipped with a Remote Commander and the recording of the DAT deck can be performed simultaneously.)
STANDBY: Press to set the unit in the record-standby mode.
START: Press to start recording of the DAT deck and then playback of the CD player.
STOP: Press to stop the DAT deck recording and the CD player playback.

Remote Commander Operation

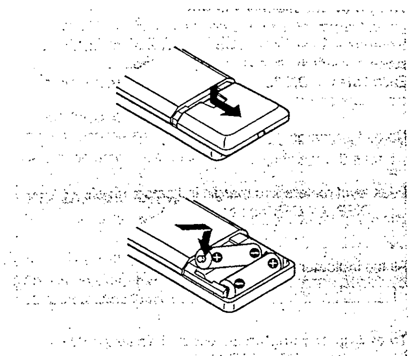
Each button on the Remote Commander functions in the same way as those having the same name on the front panel.
However, the following operations cannot be performed using the Remote Commander. Use the front panel controls instead.

- Turing the power on and off
- Selecting digital(optical/coaxial)/analog input source
- Adjust the recording level headphones level
- Setting the timer recording/playback
- Selecting the record mode (standard or long)
- Setting the REC MONITOR switch.

The following operations can be performed only with the Remote Commander.

- Activating CD synchronized recording using a Sony CD player and controlling the CD player
- Locating the desired selection on the Compact Disc or setting the CD player in the pause mode (possible only when a Sony CD player is used.)
- Repeat play (A–B)
- RMS* play
  *RMS: Random Music Sensor
- Time search (When locating the desired position of the tape by giving the time elapsed from the beginning of the tape.

Installing Batteries



Insert two size AA (R6) batteries with correct polarity, and close the lid.

Notes on remote control
- Do not expose the remote sensor on the deck to strong light such as direct sunlight, lighting apparatus, etc.
- Do not place any obstructions between the Remote Commander and the remote sensor, or else operations will not be performed correctly.
- The controllable range is limited. Point the Remote Commander directly at the remote sensor on the deck.
- When remote control operation distance becomes shorter, the batteries are weak. Replace both batteries with new ones.

To avoid battery leakage
When the commander will not be used for a long period of time, remove the batteries to avoid damage caused by battery leakage and corrosion.

Battery life
About half a year of normal operation can be expected when using the Sony SUM-3 (NS) batteries.

Location and Function of Controls

Display Window

To turn off the display window
When the power is turned on, the display window also is turned on. During recording or playback, all display or some parts of the display can be turned off.
Each time the DISPLAY MODE button is pressed, the indicators changes as follows:

Normal indicators
↓
Peak level meters and margin indicators go off.
(DISPLAY OFF indicator lights.)
↓
All the indicators go off during recording or playback
(DISPLAY OFF AUTO indicator lights momentarily just before the indicators go off.)

To change the brightness of the display window
While pressing COUNTER MODE, press one of the numeric buttons 1, 2 and 3. The greater number pressed, the darker the display window becomes.
(When operating with the Remote Commander, also press COUNTER MODE.)

1 **LONG PLAY mode indicator**
Lights when recording or playback is being performed in the long play mode.

2 **DATE indicator**
Lights when pressing the RECORDED to display the recording day of the tape being played. Lights off when pressing PRESENT button to display the current time.

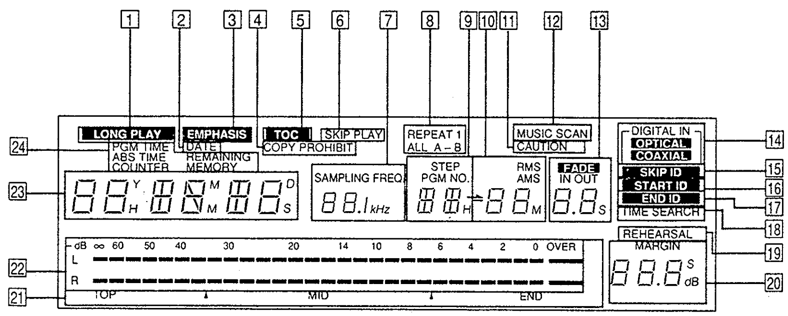
3 **EMPHASIS indicator**
Lights when a tape recorded with emphasis is played back, or when recording from a digital signal on which emphasis is applied. The emphasis function reduces the noise of the high frequency level by boosting the high frequency level during recording (Pre-emphasis function) and by lowering it during playback (De-emphasis function). This unit incorporates only the de-emphasis circuit. You can play or record the emphasized signal but newly applying emphasis cannot be performed.

4 **COPY PROHIBIT indicator**
Lights when recording the digital signal with the copy prohibit code. In this case, record with the LINE IN jack.

5 **TOC (Table of contents) indicator**
When a pre-recorded DAT cassette is played back, this indicator will light.

6 **SKIP PLAY indicator**
When this indicator is lit during playback, the portion marked by the skip ID is skipped and playback continues from the next start ID.

7 **SAMPLING FREQ. (Sampling frequency) indicator**
48 kHz: For recording/playback of analog input signals (standard mode)
44.1 kHz: For recording/playback of CD and a prerecorded DAT cassette
32 kHz: For recording/playback of analog input signals (long-play mode)



8 **REPEAT indicators**
REPEAT 1: Lights when a desired selection is played back repeatedly.
REPEAT ALL: Lights when all the selections are played back repeatedly.
REPEAT A-B: Lights when a desired portion is played back repeatedly.

9 **STEP/PGM NO. indicator**
Shows the program number of the selection being played. When programming the desired selection in the RMS operation (page 39), the display shows the step number of the programmed selection.

10 **AMS (Automatic Music Sensor)/RMS (Random Music Sensor) indicators**
Show the number of selections to be skipped ahead or behind in the AMS operation. When designating a selection directly by the numeric button and the ► button, the display shows the program number of the target selection while the selection is being searched for. When programming the desired selections in the RMS operation (page 39), the display shows the program number of the selection to be programmed.

11 **CAUTION indicator**
Lights when moisture condensation occurs. If this happens, the deck stops functioning automatically. (See page 4.)

12 **MUSIC SCAN indicator**
Lights after pressing the MUSIC SCAN button to listen to the beginning of each selection successively.

13 **Fade IN/OUT indicator**
FADE IN: Blinks when recording or playback fades in.
FADE OUT: Blinks when recording of playback fades out.

14 **Indicator of the input selector**
The OPTICAL or COAXIAL indicator lights according to the position of the INPUT selector. No indicator lights when the INPUT selector is set to ANALOG.

15 **SKIP ID indicator**
Lights when writing or erasing a skip ID code or when the skip ID is detected during playback.

16 **START ID indicator**
Blinks when writing (for 9 or 18 seconds) or erasing a start ID code, and lights when the start ID is detected during playback.

17 **END ID indicator**
Blinks when writing (for 9 or 18 seconds) or erasing a end ID code, and lights when the end ID is detected during playback.

18 **TIME SEARCH indicator**
Lights when searching the desired position of a tape by giving the time elapsed from the beginning of the tape.

19 **REHEARSAL indicator**
Lights while the rehearsal function is activated (page 27).

20 **MARGIN indicator**
Shows how much margin there is between the peak level of input audio signal and 0 dB.

21 **Frequency map indicator**
Bars indicating the sampling frequencies with which the tape was recorded appear on the peak level meters. (Refer to page 33.)

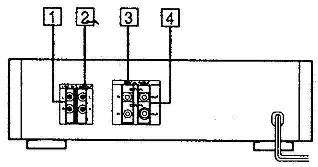
22 **Peak level meters**
Indicate the peak value of the audio signal being recorded when the REC MONITOR switch is set to SOURCE or the peak value of the audio signal recorded on the tape when the REC MONITOR switch is set to TAPE.

23 **Time indicator**
Indicates the tape running time, absolute time, elapsed time of the current selection, remaining time or recording day. Each time the COUNTER TIME button is pressed, the display is changed.

24 **REMAINING (remaining time):** Lights when the counter shows the remaining time of the tape.
PGM TIME (program time): Lights when the counter shows the elapsed time of the current selection.
ABS TIME (absolute time) indicator: Lights when the counter shows the tape running time from the beginning.
COUNTER indicator: Lights when the counter shows the tape running time.
MEMORY indicator: Lights when the MEMORY function can be performed in the COUNTER mode.

Connections

Rear Panel Jacks



1 **LINE IN (line input) jacks (phone jack)**
Connect to the recording outputs of an amplifier. Signals supplied by the amplifier can be recorded using the sampling frequency of 48 kHz in the normal play mode or 32 kHz in the long play mode.

2 **LINE OUT (line output) jacks (phono jack)**
Connect to the DAT or tape inputs of an amplifier. The playback signal of this deck will be output.

3 **COAXIAL/OPTICAL DIGITAL IN (digital input) jacks (coaxial phono jack/optical jack)**
Connect to the digital outputs of an amplifier having a built-in D/A converter or other digital source, such as a CD player for digital-to-digital recording.

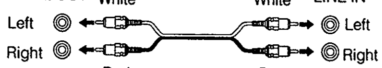
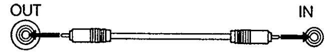
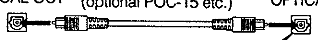
4 **COAXIAL OPTICAL DIGITAL OUT (digital output) jack (coaxial phono jack/optical jack)**
Connect to the digital inputs of an amplifier having a built-in D/A converter or another DAT deck, for playback of a DAT cassette or digital-to-digital recording.

Notes on connection
- Use the connecting cords specified in the illustrations.
- Turn off the power for all equipments before making connections.
- Be sure to insert the plugs firmly into the jacks. Loose connections may cause hum and noise. When unplugging, grasp the plug and not the cord.

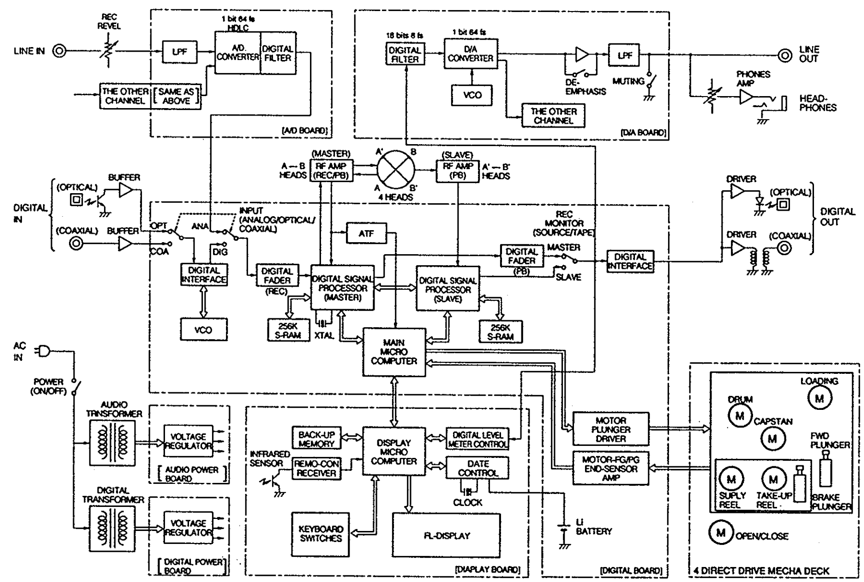
Notes on the optical cable
- Do not bend the cord. When the cord is not used, curl it with a diameter of more than 15 cm (5 $^7/_8$ inches).
- Do not use it under high temperatures.
- When the optical cable is not connected, cover the OPTICAL IN/OUT jacks with the supplied caps.

Note on sound signals
When connecting an optical cable to the DIGITAL IN/DIGITAL OUT jacks, sound signals (L/R) are transmitted together through the cable.

Connecting Cord
There are following three types of connecting jacks at the rear of the deck. Each type of jack requires a different type of connecting cord.

LINE IN/OUT (analog input/output) jacks	Audio signal connecting cord (supplied, or optional RK-C505KS etc.) LINE OUT White — White LINE IN Left — Left Right — Right Red — Red 
COAXIAL IN/OUT (digital input/output) jacks	Coaxial digital connecting cord (optional VMC-1ES etc.) COAXIAL OUT — COAXIAL IN 
OPTICAL IN/OUT (optical transmission digital input/output) jacks	Optical cable (optional POC-15 etc.) OPTICAL OUT — OPTICAL IN  **How to connect the optical cable** Remove the cap. Plug in firmly.

Block Diagram



Time Setting

This unit employs a built-in clock to keep track of the current date and time. Once you set the date and time, this information will be recorded on the tape along with the audio signal during recording. This function is very convenient because it allows you to check when the tape was recorded when playing the tape later.

Setting the date and time

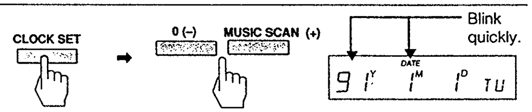
Example: Setting the clock to 10:30:00 AM, July 4, 1991 (Thursday)

Setting the date

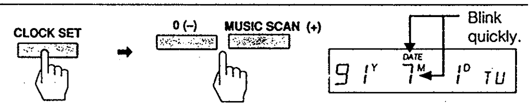
1 Display the current date.



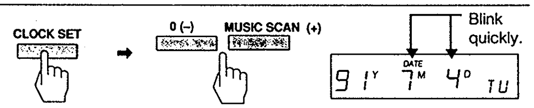
2 Set the year.



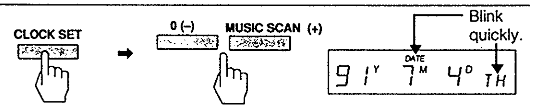
3 Set the month.



4 Set the day.



5 Set the day of the week.



6 Complete the setting procedure.



Note: In the time setting description, US model is used as an example.
On AEP, UK model 24 hours clock is used.

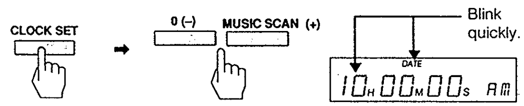
Time Setting

Setting the time

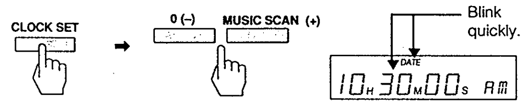
1 Display the current time.



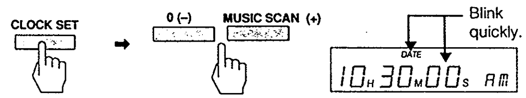
2 Set the hour.



3 Set the minutes.



4 Set the seconds to 0.



5 Start the clock simultaneously with the signal from a timecast (telephone, etc.).



To confirm the date or time
Press the PRESENT button to display the date or time. One press displays the date and two presses displays the time. To return to the original counter display, press the COUNTER button.

Time display
The time is displayed in 12-hour format.
Midnight and noon are displayed as follows:
Midnight: AM 12:00
Noon: PM 12:00

Built-in clock
This unit's built-in clock operates using a quartz oscillator, and time variations caused by changes in temperature, etc., may accumulate. For precise recording of hour, minute, and second data by the built-in date function, it is recommended that you set the clock once a week.

Precautions when setting the time
- Set the time while the tape is stopped.
- Although this unit's clock automatically adjusts for leap years and long and short months, do not enter a date which does not exist.

A The day of the week and AM/PM are displayed as follows.

Sunday	SU
Monday	MO
Tuesday	TU
Wednesday	WE
Thursday	TH
Friday	Fr
Saturday	SA

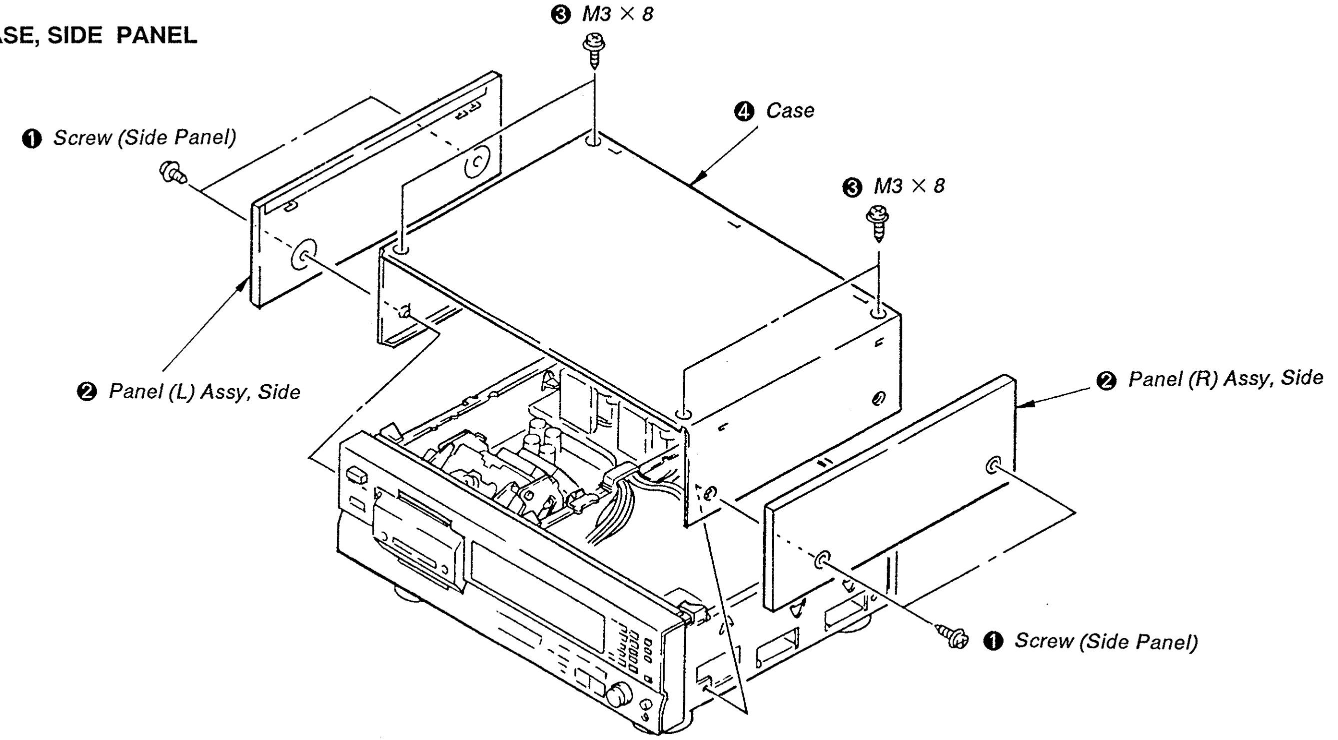
AM	AM
PM	PM

Note
This unit uses a back-up battery to keep the clock running when the power is turned off. The life of the battery under normal use is approximately five years. When the battery starts to run down, the clock will stop operating normally. When this occurs, have the battery replaced at your dealer or nearest Sony Service Center (a battery replacement fee is required).

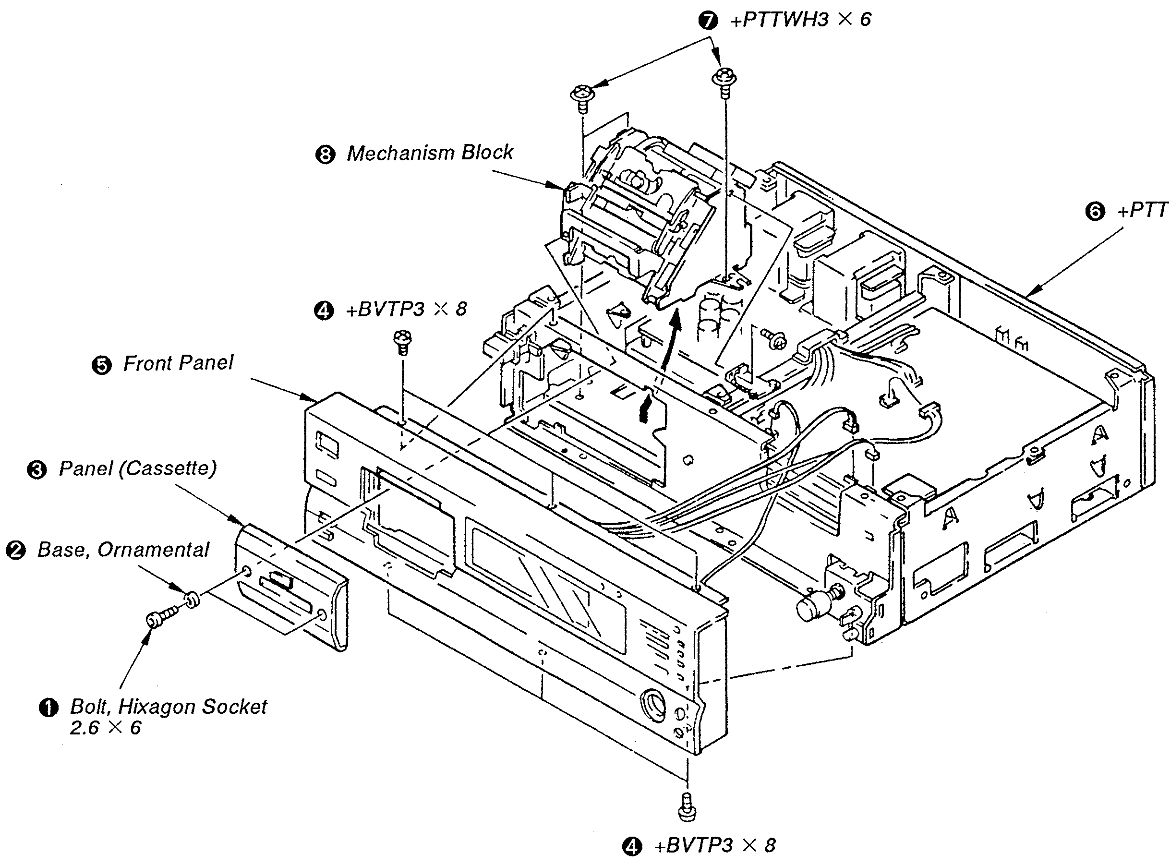
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

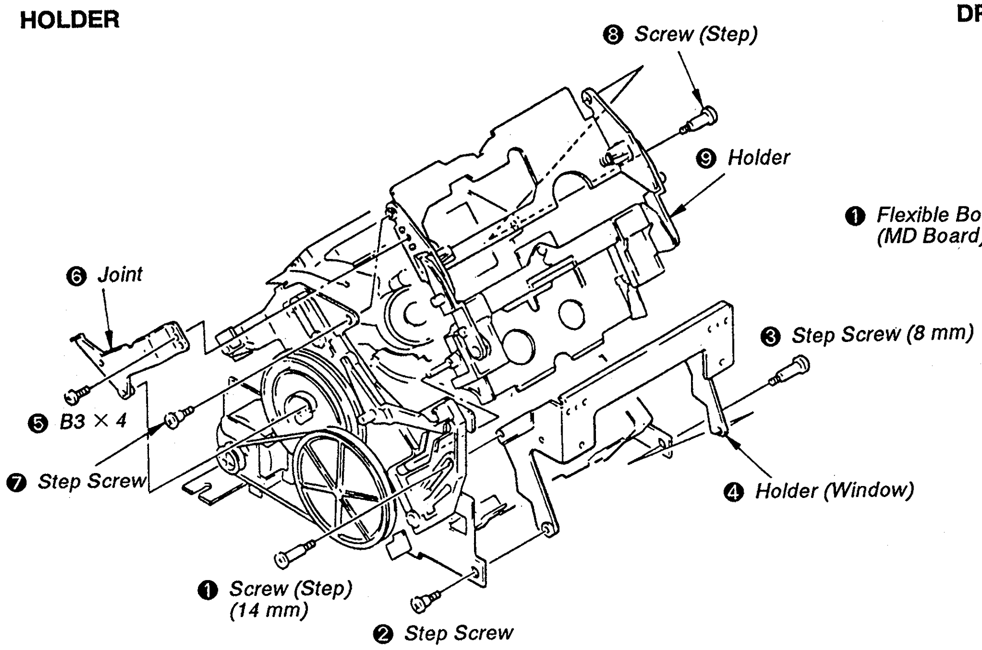
CASE, SIDE PANEL



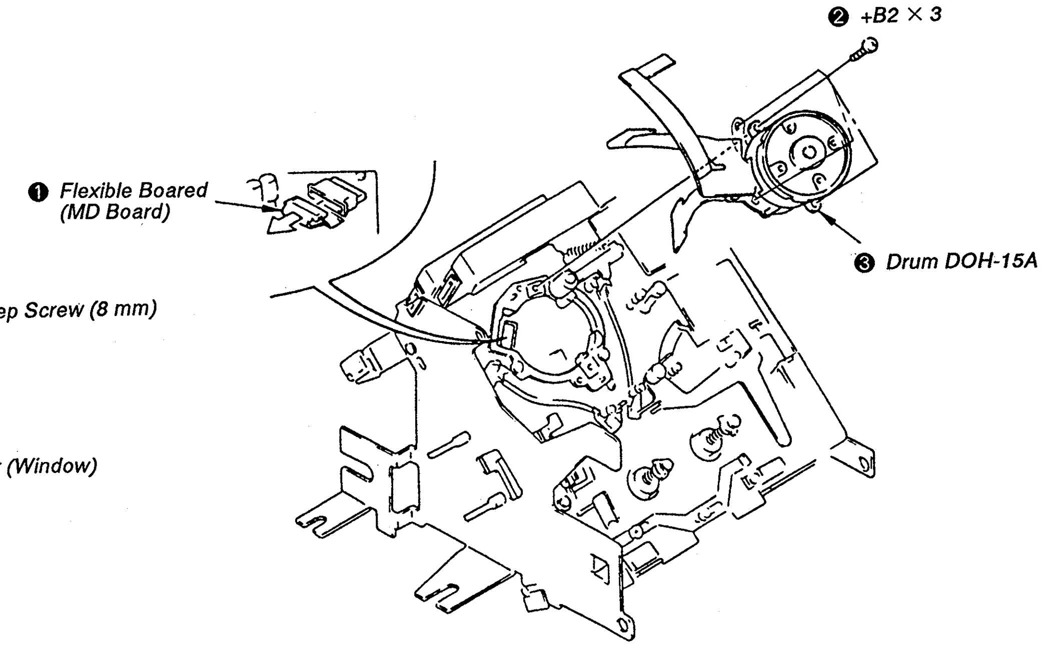
PANEL (CASSETTE), FRONT PANEL, MECHANISM BLOCK



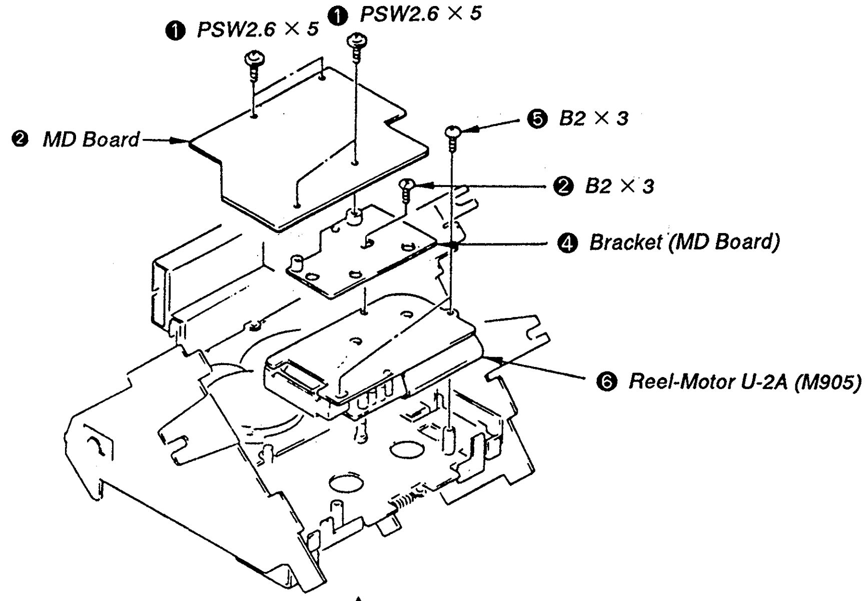
HOLDER



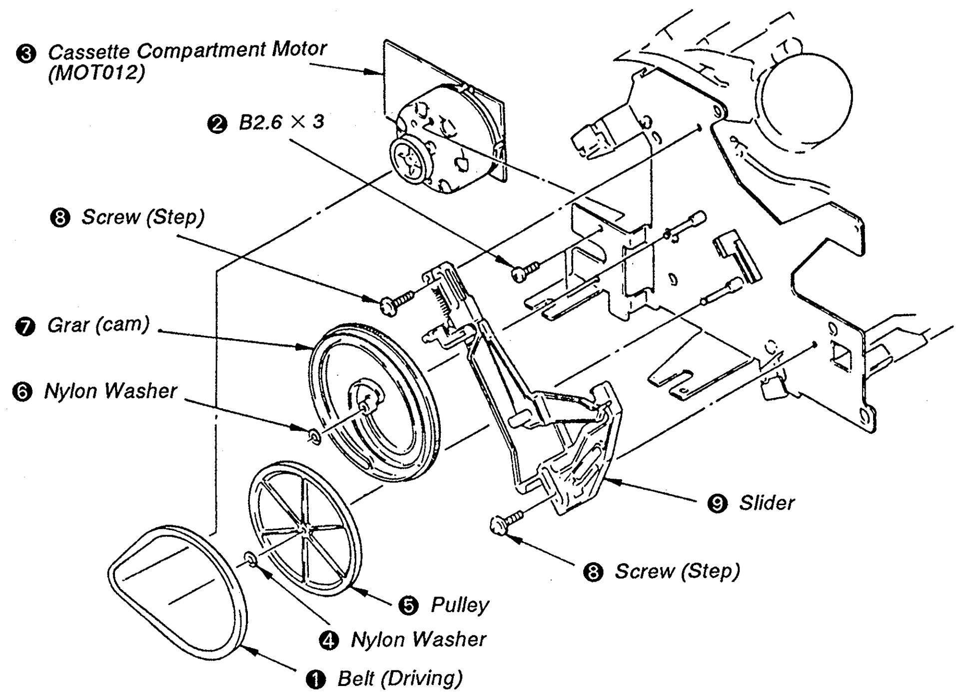
DRUM DOH-15A



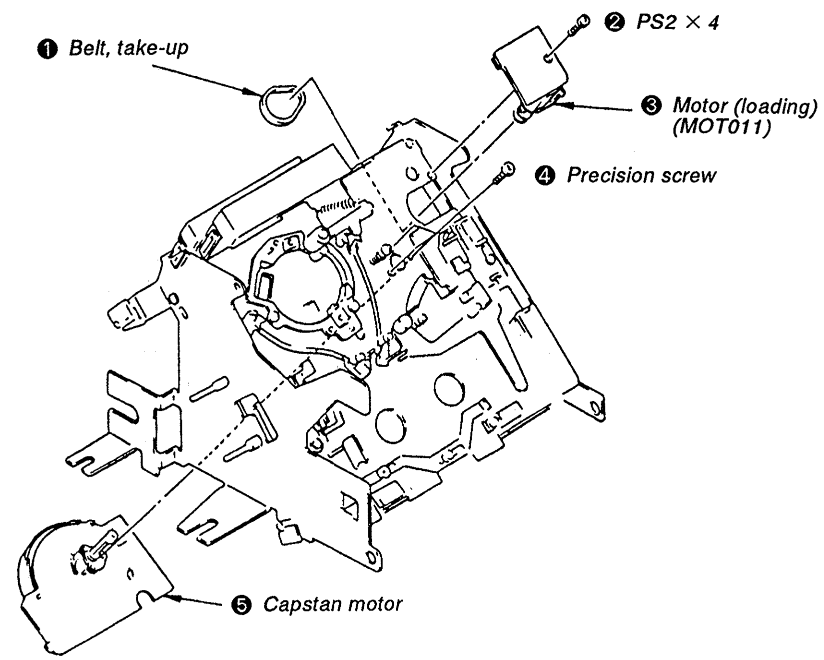
MD BOARD, REEL MOTOR U2-A (M905)



CASSETTE COMPARTMENT MOTOR (MOTO12), PULLEY, GEAR (CAM), SLIDER



LOADING MOTOR (MOTO11), CAPSTAN MOTOR U-17A (M902)



SECTION 3
ADJUSTMENTS

Notes When Making Adjustments

1. Adjustments should be performed in the order listed.

2. Use the following test tapes :

   TY-7111 (8-909-812-00) ················ Level
   TY-7252 (8-909-822-00) ················ Tracking
   TY-7551 (8-909-814-00) ················ Functions
   TY-30B (8-892-358-00) ················· Blank

   Use the following torque meter :

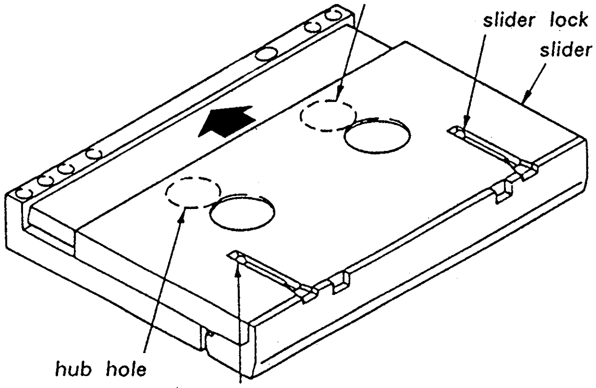
   TW-7131 (8-909-708-71) ················ FWD

3. Switches and controls should be set as follows unless otherwise specified.

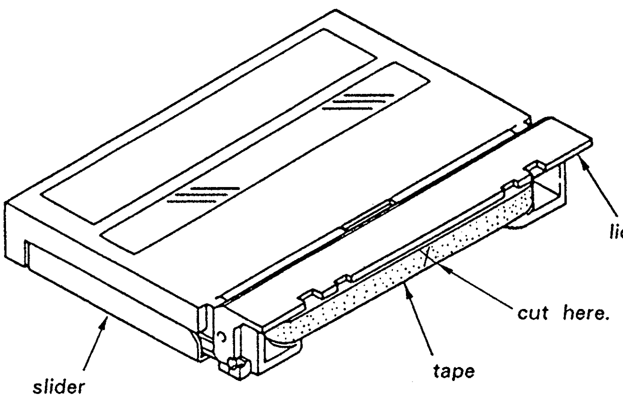
TIMER switch :	OFF
REC MODE switch :	LONG
INPUT switch :	COAXIAL
REC LEVEL control :	Min.
PHONES LEVEL control :	Min.

4. Creating an end sensor cassette

   (1) Press the tape slider lock and move the slider in the direction indicated by the arrow.



   (2) Open the lid and cut the tape.



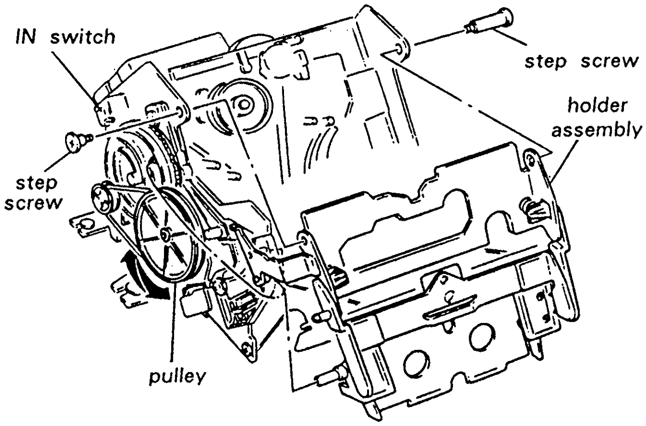
   (3) Turn the hubs until the tape is completely inside the cassette (both T and S sides).
   The end sensor cassette for end sensor adjustment is now ready for use.

5. Be careful not to move RV951 and RV952 on the RF AMP board in the mechanism assembly.

6. To adjust the tape path and guides, remove the holder assembly as shown in the diagram and use the DAT holder jig (J-2000-002-A). This will make it easier to perform adjustments.

- First turning the pulley counterclockwise to put it in loading out status will make removal and reattachment of the holder assembly easier.

- To perform adjustments, turn the pulley clockwise to put it in loading in status, load the cassette tape and set the IN switch to the ON position.



7. Test mode

   To set to the test mode, short-circuit between Pin ⑦ (XTEST) and Pin ⑥ (GND) of CN553 on the digital board. At this time, "TEST" letters turn on red on the fluorescent display. And at the same time, turning on the date on the flouorescent display, it becomes to the torque measurement mode.

   Test mode (Short-circuit between XTEST and GND)

   ① Turn off the date on the fluorescent display.
   (Press COUNTER MODE key)
   - S2, T2, F guides Adjustment
   - End Sensor Adjustment
   - Tape Path Adjustment
   - DPG Adjustment
   - ATF Pilot Adjustment

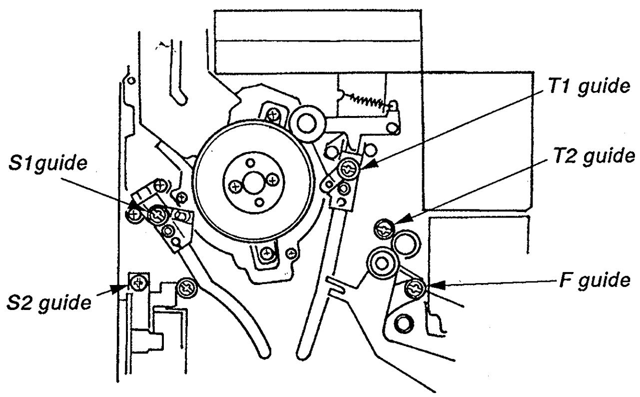
   ② Turn on the date on the fluoresent display.
   (Press DATE-RECORD key)
   - FWD Torque Adjustment
   - FWD Back-Tension Adjustment

   } Torque Measurement Mode

   To release the test mode, release the short-circuit point between XTEST and GND,
   After the adjustments, be sure to release the test mode.

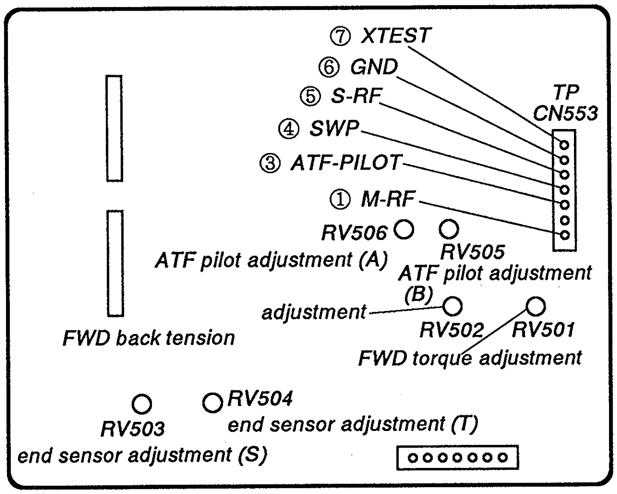
Adjust Parts Location

– Mechanism assembly –



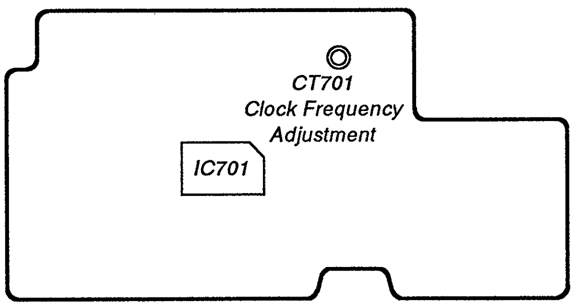
– **Digital Board** –

– SIDE B –



– **Control Board** –

– SIDE A –



3-1. MECHANICAL ADJUSTMENTS

After replacing the drum or related parts, adjust the S2, T2 and F guides and then perform the tape path (× 1.5 FWD mode) fine adjustment of electrical adjustments.,

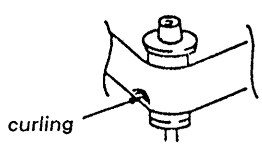
S2, T2 Guide/F Guide Adjustment

Adjustment Procedure :

1. Put the set into the test mode and load test tape TY-7252 (8-909-822-00).
2. Set the REC MODE switch to STANDARD (ATF : OFF) and press the AMS ⏭ key.

Confirm there is no curling at the upper or lower flange of S2, T2, or F guides.
When there is curling, return higher S2, T2, F guides and adjust by screwing in.

* Curling :



"Curling" refers to distortion on the tape during FWD operation. It can be identified by directing a light at the tape.

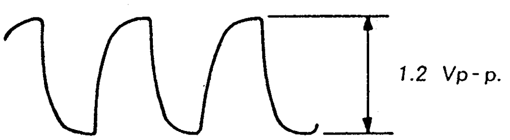
3-2. ELECTRICAL ADJUSTMENTS

End Sensor Adjustment

Perform the following adjustment when the holder has been removed or part of the mechanism deck section replaced.

Adjustment Procedure:

1. Connect an oscilloscope to CN554 pin ⑤ (SEND) (supply side) and CN554 pin ⑥ (TEND) (take-up side) on the digital board.
2. Load an end sensor cassette and put the set into the STOP (■) mode.
3. Adjust RV503 (supply side) and RV504 (take-up side) on the main board so that the oscilloscope waveform p-p value is 1.2 Vp-p.



Adjustment Point: digital board

FWD Torque Adjustment

Adjustment Procedure :

1. Put the set into the test mode and load the FWD torque meter TW-7131 (8-909-708-71).
2. Put the set into the PLAY (▶) mode.
3. Adjsust RV501 so that the FWD torque value (take-up side rewinding torque) is between 10 – 15 g•cm (0.14 – 0.21 oz•inch).
4. Confirm that the value indicated by the torque meter is maintained for one full cycle.

Adjustment Point: digital board

FWD Back Tension Check

Check Procedure :

1. Put the set into the test mode and load the FWD torque meter TW-7131 (8-909-708-71).
2. Put the set into the PLAY (▶) mode.
3. Adjust RV502 so that the back tension (supply side) is between 8 – 9 g-cm (0.11 – 0.13 oz•inch).
4. Confirm that the value indicated by the torque meter is maintained for one full cycle.

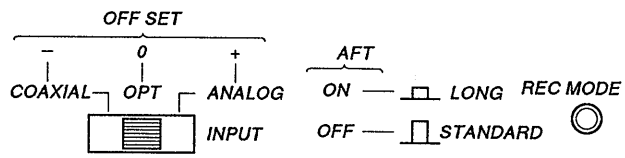
Tape Path Fine Adjustment (× 1.5 FWD Mode)

Perform the following adjustment when the drum has been replaced.

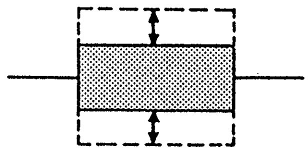
Adjustment Procedure:

1. Connect an oscilloscope CH-1 to CN553 pin ① (M-PF) and CH-2 to CN553 pin ④ (SWP) on the digital board.
2. Put the set into the test mode and load test tape TY-7252 (8-909-822-00).
3. Press the AMS (▶▶|) key.

Each part of switches on Test Mode.

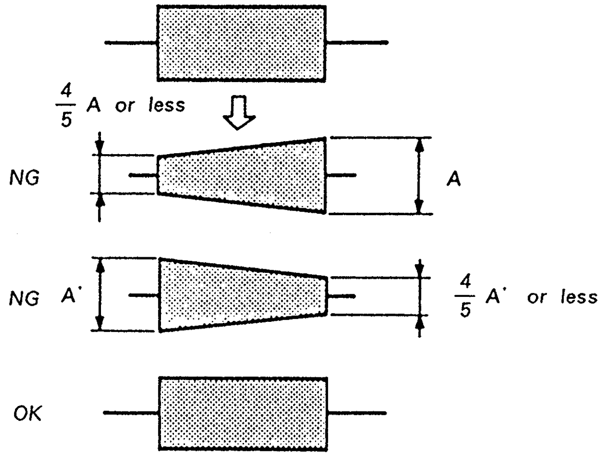


4. With the REC MODE switch set to STANDARD (ATF: OFF) and the INPUT switch set to ANALOG or COAXIAL (OFFSET: + or –), fine adjust the S1 and T1 guides so that the oscilloscope RF signal waveform remains the same when high-low is repeated.

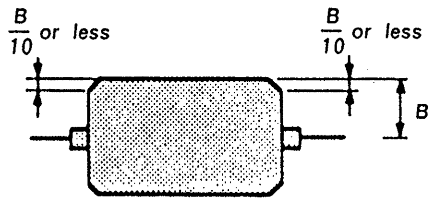


* Finish the adjustment by screwing in, and when there is curling at the upper or lower flange of S2, T2, or F guides, perform the guide adjustment.

5. Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the INPUT switch set to ANALOG or COAXIAL (OFFSET: + or –).



6. Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the INPUT switch set to OPTICAL (OFFSET: 0)
   (1) Confirm that the RF signal waveform peak value is 60 mV or more.
   (2) Confirm that the undershoot level of the RF signal waveform's flat portion is within 10%.



7. When the measured values are not within the above tolerances, repeat items 3 - 6 above.

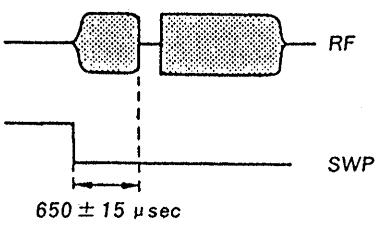
Adjustment Point : mechanism assembly

DPG Adjustment

Perform the following adjustment without fail when the drum has been replaced.

Adjustment Procedure :

1. Connect oscilloscope CH-1 to TP (RF) and CH-2 to TP (SWP) on the main board.(Use CH-2 as the trigger. When the CH-2 signal is inverted, the trailing edge can be used for synchronization.)
2. Put the set into the test mode and load test tape TY-7252 (8-909-822-00).
3. Set the REC MODE switch to LONG (ATF : ON) and the TIMER switch to OFF (OFFSET : 0).
4. Press the AMS (⏭) key.
5. Press the ⏪ and ⏩ keys as appropriate so that the gap between the oscilloscope SWP and RF signals becomes 650 ± 15 μsec.(Hold the ⏪ and ⏩ keys down for more than 1 second to perform rough adjustment. Hold them down for approximately 0.2 seconds for fine adjustment.)

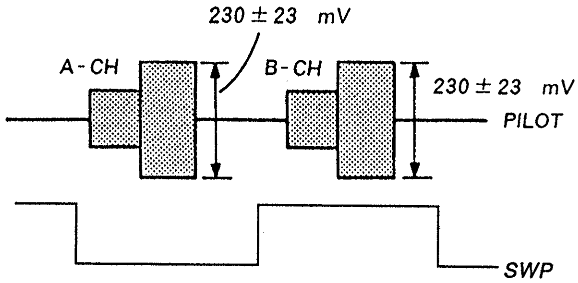


ATF Pilot Adjustment

Perform this adjustment after cleaning the heads with a cleaning cassette.

Adjust Procedure:

1. Connect oscilloscope CH-1 to CN553 pin ① (ATF-PILOT) and CH-2 to CN553 pin ④ (SWP) on the digital board. (Use CH-2 as the trigger.) When the CH-2 signal is inverted, the trailing edge can be used for synchronization.)
2. Put the set into the test mode and load test tape TY-7252 (8-909-822-00).
3. Put the set into the PLAY (▶) mode and adjust RV505 (B-CH) and RV506 (A-CH) on the main board so that the oscilloscope PILOT waveform P-P value is 230 ± 23 mV.



Adjustment Point: digital board

3-3. CHECKS AND ADJUSTMENTS FOR DATE FUNCTION

Clock IC Back-up Check

- When there is the short-circuit position on the pattern around the lithium battery (BAT501) or the clock IC (IC712) or disconnecting CN573 on removing the front panel assembly the clock is reset.

  (In spite of pressing PRESET button, the date indication becomes "__Y __M __D " " ‾‾H ‾‾M ‾‾S")

  At this time, check the back-up function by the procedures given below.

  (1) Connect DC voltmeter to CN554 pin ① (BATT+) and pin ② (BATT −) on the digital board.

  (2) When the power is off, the voltage value of the item (1) should be less than +30 mV.

  (When the voltage value becomes +30 mV or more, Check around IC712 or replace IC712.)

  (3) When the power is on, the voltage value of the item (1) should be less than 0 mV (− (minus) indication).

  (When the voltage value becomes + (plus) indication, Check around D718 or replace D718.)

  (4) When the above voltage values are normal, set the preset date and time (year, month, day, day of the week, hour, minute, second) according to the instruction manual.

  (5) After setting the time on the item (4), turn power off and turn power on several seconds later, and check the clock works normally.

Back-up Battery Replacement

The life of the back-up battery under normal use (normal temperature, normal humidity) is approximately ten years or more. (On the instruction manual, described "approximately five years".)

Be carefull about the following points on the battery replacement.

- Repair the cause of the battery wastage by performing mentioned above "Clock IC Back-up Check".
- The open-circuit voltage of the replaced battery is 3.0 V or more as the new one, and when it is 2.0 V or less, it is completely consumed, replace it with new one.
- After the battery replacement, perform "Clock IC Back-up Check" again and set the time*.

* Time setting procedure described on page 9.

Clock Frequency Adjustment

Note:

- On normal repair, this adjustment is not neccesory. Don't turn the trimmer capacitor CT701.
- Only when needing this adjustment (X702 replacement or so on), perform in the order given.
- Use the frequency counter with six digits or more.

Adjustment Procedure:

1. Connect a frequency counter to the test land "OSC FREQ" on the display board.
2. Turn power on and adjust with CT701 so that the reading on the frequency counter becomes 2048.00 ± 0.01 Hz .(in normal temparature)
3. Perform "Clock IC Back-up Check" described above.

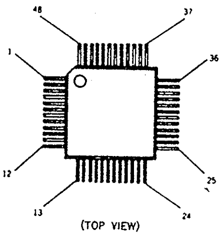
SECTION 4
DIAGRAMS

• SEMICONDUCTOR LEAD LAYOUTS

A1QH3020S

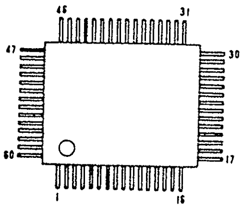


CXA1045Q-Z
CXA1364R



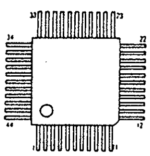
(TOP VIEW)

CXD1136Q

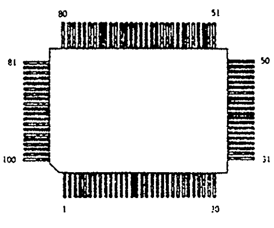


MARKING SIDE VIEW

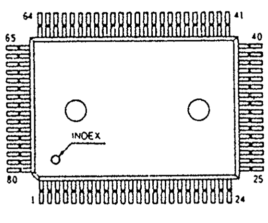
CXD2552Q-1



CXD2601AQ

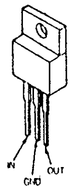


CXP80524-020Q
MSC62408-020GS-K

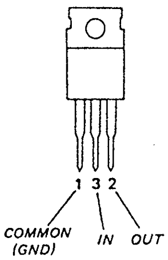


MARKING SIDE VIEW

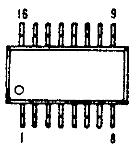
M5F7805L-720
M5F7808
TA7805S
μPC2405HF
μPC2406HF



M5F7905L
TA7905S

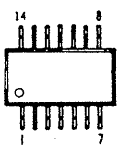


MC14051BF
MSM6338MS-K



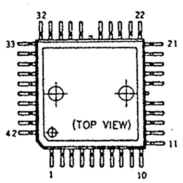
(TOP VIEW)

MC14069UBF

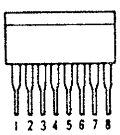


(TOP VIEW)

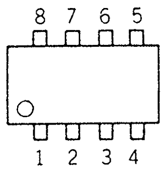
M50782FP



M54641L

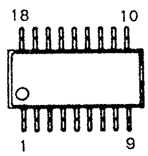


RC4560DD



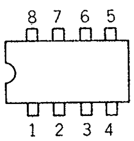
(Top view)

RF5C62



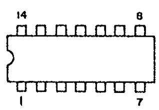
(TOP VIEW)

LM393P
M5239P
NE5532P
μPC358C



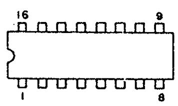
(Top view)

SN74HC393N
LC74HC08
SN74HCU04AN
SN74HC00AN
SN74HC04AN
SN74HC14AN
SN74HC74N
SN74LS624N
TC74HCU04AF
MC74AC74N



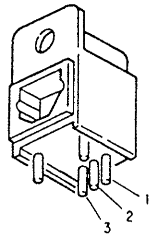
(TOP VIEW)

SN74HC157AN
SN74HC175AN
TC74HC123AP

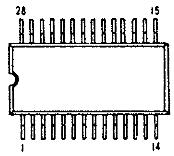


(TOP VIEW)

GP1F32R
GP1F32T

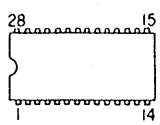


CXA1046M
CXK58257M-12L



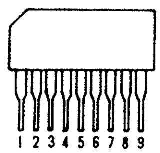
(TOP VIEW)

SM5813APT

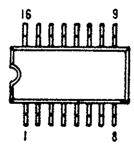


(Top view)

TC5081AP

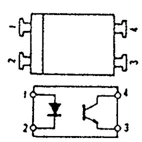


CX20115A

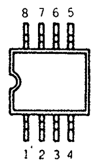


(TOP VIEW)

PC817-C

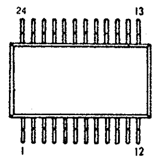


CXK1011M
LM358M
LM393M



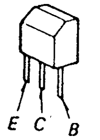
(TOP VIEW)

CXK5816M-12L

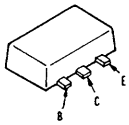


(TOP VIEW)

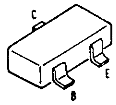
2SD1312-K



2SB798-DL
2SD1621-R



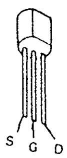
DTA114EK
DTC114EK
DTC124EK
DTC143TK
DTC144EK
2SC1623-L6



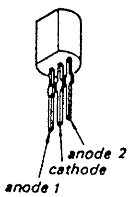
2SK241-GR



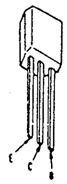
2SK246-GR
2SK30A-O



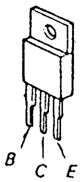
KV1320



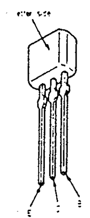
DTA114ES
DTC114ES



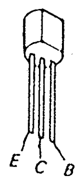
2SA985A-P
2SB1370-EF
2SC2275-P
2SD2061-EF



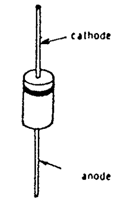
2SA1175-HFE
2SC2785-HFE



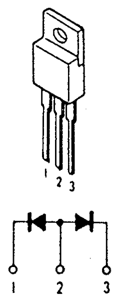
2SA1371-E
2SB1013-4
2SC3468-E
2SD1387-3



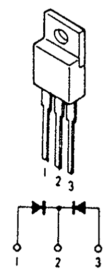
EQB01-08Q
HZ4BLL
10E2N
30DF2



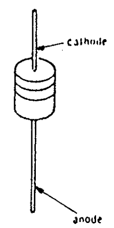
F10P20F



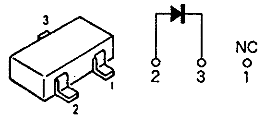
F10P20FR



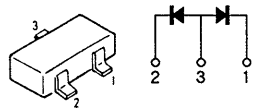
HZS6A1L
HZS33-1L
RD3.3ES-B2
RD3.9ES-B2
RD5.1JS-B2
1SS168
1SS202-1
11ES2



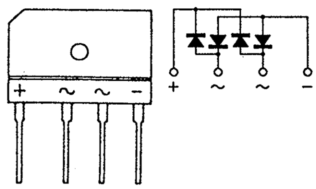
SB05-05CP



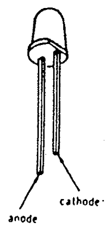
1S2836



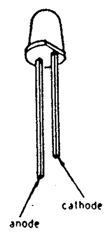
RBV-602-01



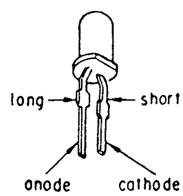
AA3432S



SLR-34MC3
SLR-34VC3



SEL2510W-D
GL-3PR9



4-1. PIN FUNCTION

IC501 MASTER microcomputer (CXP80524)

While exchanging data with the display microcomputer (IC701) by the serial communication, this IC controls the mechanism check servo and selects inputs DSP (IC502, 503) and the attenuator (IC504).

PIN	SIGNAL NAME	I/O	LOGIC		FUNCTION
			O	I	
1	ATTEX	O	Outside (ATTCK)	Inside (1/8 LECK)	Attenuator (IC504) clock select output
2	ATTCK	O	–	–	Attenuator (IC504) level set clock output
3	FPON	O	OFF	ON	FWD plunger (PM002) ON/OFF output
4	FPKI	O	OFF	ON	FWD plunger (PM002) KICK output
5	TLOCK	O	ON	OFF	REEL T side LOCK output
6	CPDIR	O	FWD	RVS	CAPSTAN DIRECTION select output
7	BPON	O	OFF	ON	REEL BRAKE plunger (PM001) ON/OFF output
8	BPKI	O	OFF	ON	REEL BRAKE plunger (PM001) KICK output
9	DRON	O	OFF	ON	DRUM motor ON/OFF output
10	DRDIR	O	NORM	RVS	DRUM DIRECTION select input
11	OPT/COA	O	OPTICAL	COAXIAL	DIGITAL IN, OPTICAL/COAXIAL select output
12	DIG/ANA	O	DIGITAL	ANALOG	INPUT/DIGITAL/ANALOG select output
13	REC/PB	O	REC	PB	Mode REC/PB select input
14	MST/SLV	O	SLAVE	MASTER	MONITOR MASTER/SLAVE (SOURCE/TAPE) select
15	SLVMUT	O	OFF	MUTE	MUTE output so SLAVE DSP (IC503)
16	MSTMUT	O	OFF	MUTE	MUTE output to MASTER DSP (IC502)
17	FS1	O	–	–	fs select: FS1 — STOP 0, 44.1K 0, 32K 1, 48K 1
18	FS0	O	–	–	fs select: FS0 — STOP 0, 44.1K 1, 32K 0, 48K 1
19	DFMUT	O	OFF	MUTE	MUTE output to DIG-FIL (IC312)
20	DOCNT	O	OFF	ON	DIGITAL OUT (ON/OFF) CONTROL output
21	LMEJ	O	OFF	ON	LOADING motor EJECT direction } BRAKE MODE at ON-ON
22	LMLD	O	OFF	ON	LOADING motor LOAD direction } BRAKE MODE at ON-ON
23	LINMUT	O	OFF	MUTE	Line mute (relay) output
24	DISPSL	O	ON	OFF	DISPLAY microcomputer communication SELECT output
25	TEND	I	–	–	T side END SENSOR TLED ON } DC (=): Magnetic part, AC (⊓⊓⊓): Leader tape
26	SEND	I	–	–	S side END SENSOR SLED ON } DC (=): Magnetic part, AC (⊓⊓⊓): Leader tape
27	CMCL	O	OFF	ON	CAS-CON. motor CLOSE direction } BRAKE MODE at ON-ON
28	CMOP	O	OFF	ON	CAS-CON. motor OPEN direction } BRAKE MODE at ON-ON
29	TLED	O	OFF	ON	T side LED drive output } DUTY 50% DRIVE on T/S antiphase
30	SLED	O	OFF	ON	S side LED drive output } DUTY 50% DRIVE on T/S antiphase
31	MP	I	Inside ROM	Outside ROM	MICRO PROCESSOR MODE input (fixed to "0")
32	XRST	I	RESET	↑ RELEASE	RESET
33	Vss	–	–	–	GND
34	XTAL	–	–	–	NC
35	EXTAL	–	–	–	Microcomputer external clock (=MCLK=9.408 MHz)
36	DISPLSY	I	ON	OFF	DISPLAY microcomputer communication sync input
37	DISPDI	I	–	–	DISPLAY microcomputer communication serial data input
38	DISPDO	O	–	–	DISPLAY microcomputer communication serial data output

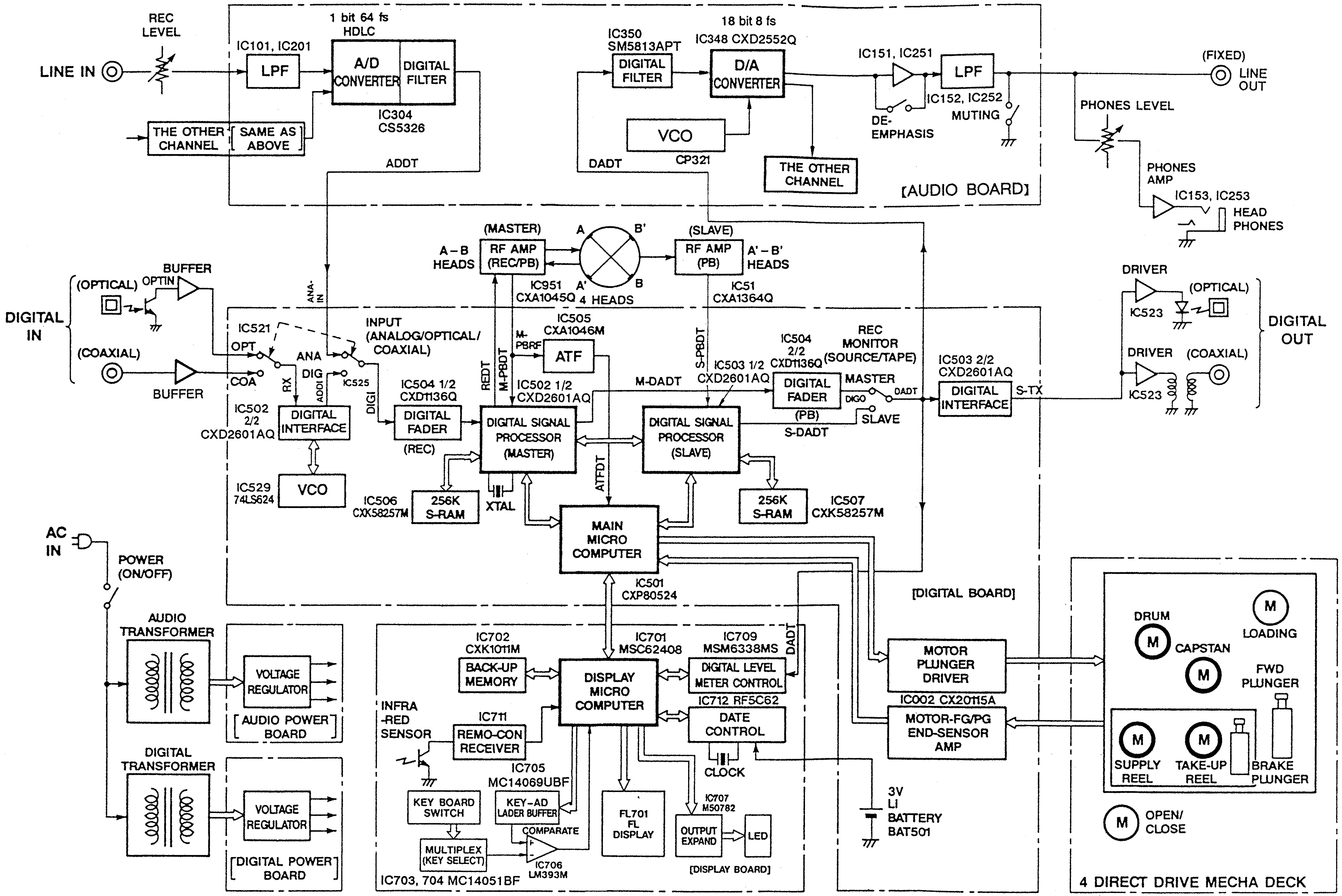
PIN	SIGNAL NAME	I/O	LOGIC		FUNCTION
			O	I	
39	DISPCK	I	–	–	DISPLAY microcomputer communication serial clock input
40	SBSY	I	ON (communicatable)	OFF (not communicatable)	Signal processing communication SUB DATA SYNC. input
41	SBDI	I	–	–	Signal Processing communication SUB DATA IN. input
42	SBDO	O	–	–	Signal Processing communication SUB DATA OUT. input
43	SDCK	O	–	–	Signal Processing communication SUB DATA CLOCK. input
44	AVss	–	–	–	Analogue input GND
45	AVref	–	–	–	Analogue input REFERENCE (+5 V)
46	AVdd	–	–	–	Analogue input +5 V
47		I			Not used (Pull-up)
48	SWAD3	I	–	–	SWITCH A/D input (CAS-CON system)
49	SWAD2	I	–	–	SWITCH A/D input (LOADING system)
50	SWAD1	I	–	–	SWITCH A/D input (RECGN system)
51	SWAD0	I	–	–	SWITCH A/D input (RECGN system)
52	LEVSYN	I	NONE	MUSIC	LEVEL SYNC input (Write START-ID by the audio input)
53	MUTM	I	OFF	MUTE	MUTE monitor input from MASTER DSP (IC502)
54	ATFIN	I	–	–	ATF PILOT signal input
55	TFG	I	–	–	T-REEL FG input
56	SFG	I	–	–	S-REEL FG input
57	CFG	I	–	–	CAPSTAN FG input
58	DFG	I	–	–	DRUM FG input
59	DPG	I	–	–	DRUM PG input
60	DREF	I	–	–	DRUM REFERENCE 100/3 (SP), 50/3 (LP), 1.6k (SEARCH) (Hz $\pm\alpha$) input
61	MCLK	I	–	–	MASTER CLOCK (F_{CH}=9.408 MHz) input
62	PBDT	I	–	–	PB (playback) DATA input
63	SWP	O	Ach	Bch	SWITCHING PULSE
64	DPWM	O	–	–	DRUM PWM output
65	CPWM	O	–	–	CAPSTAN PWM output
66	TPWM	O	–	–	T-REEL PWM output
67	SPWM	O	–	–	S-REEL PWM output
68	ADRES	O	RESET	ACTIVE	Reset output for AD converter
69	ERMN	I	RF is none and REC	RF exists	ERROR MONITOR (PBRF exists or not) input
70	XTEST	I	ON	OFF	TEST MODE input
71	POWDN	I	ON	OFF	POWER DOWN detect input (AC POWER OFF input)
72	VDD	–	–	–	+5 V
73	Vss	–	–	–	GND
74	NC	–	–	–	Not connected
75	ATFS2	O	–	–	ATF Sync signal output to MASTER DSP (IC502)
76	DIVCO	O	OSC ON	OSC STOPS	Osc. ON/OFF select output to DIG-IN VCO (IC529)
77	ATFS3	O	–	–	SYNC3/RF AMP MODE for ATF (IC505)
78	LP/SP	O	LP	SP	LONG PLAY/STANDARD PLAY select output
79	XDTR	O	ON	OFF	DATA RECORDER MODE (ON during LP after-recording or searching)
80	ATTMUT	O	OFF	MUTE	Attenuator (IC504) MUTE, (ON during fading)

IC701 DISPLAY MICROCOMPUTER (MSC62408)

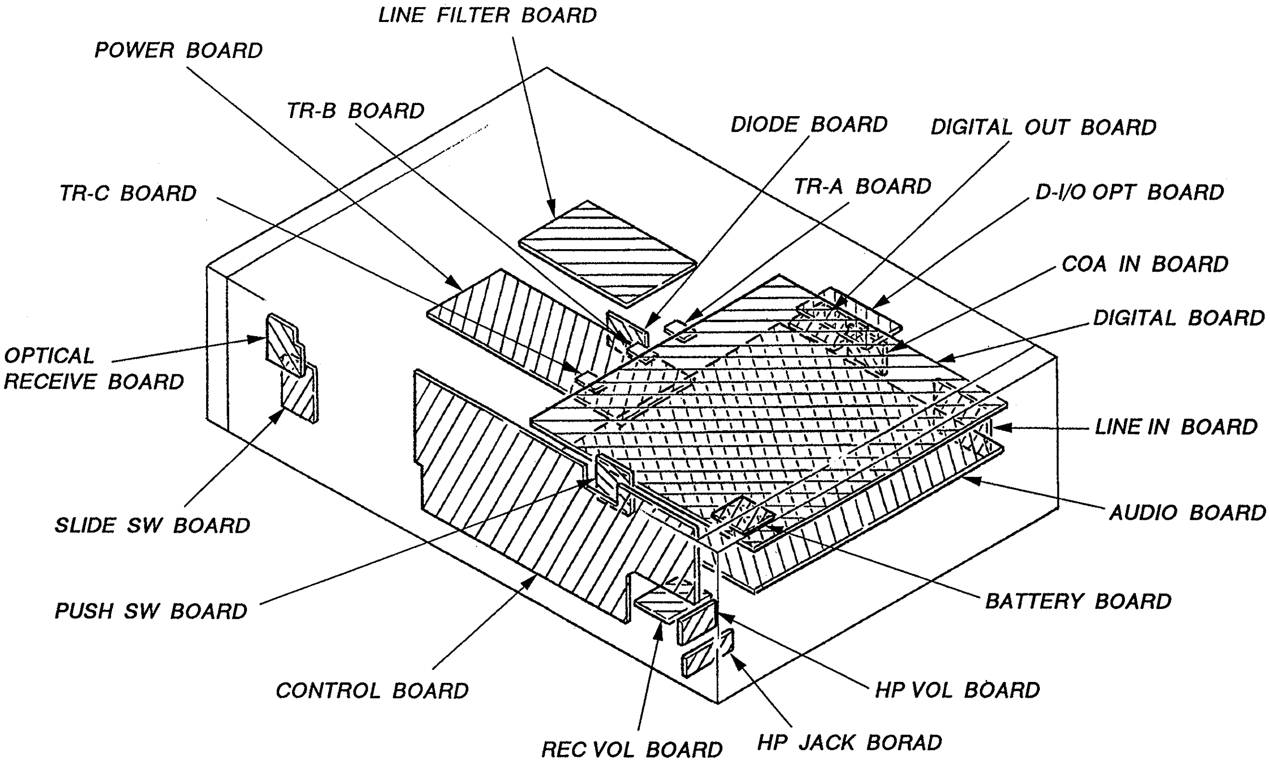
While serial communicating, this IC controls the fluorescent display tube, the level meter (IC709), the clock (IC712), the remote control signal, LED indication by the expansion port (IC707), key input scan, address set for SRAM (IC718).

PIN	SIGNAL NAME	I/O	LOGIC		FUNCTION
			O	I	
1 – 2	D6 – D7	I/O	–	–	Data bus
3	PMODE0	I			PORT MODE 0 } Mode setting input (normally open) for each processing
4	PMODE1	I			PORT MODE 1 } Mode setting input (normally open) for each processing
5	PMODE2	I			PORT MODE 2 } Mode setting input (normally open) for each processing
6	MMUTE	I	OFF	MUTE	Level meter muting input
7	ROMSI	I	–	–	Serial data input from E^{2}PROM (IC702)
8	ROMBY	I	ON	OFF	BUSY signal input from E^{2}PROM (IC702)
9	CMPIN	I	Vref < Vkey	Vref > Vkey	Comparator out input for KEY A/D
10	MSTAK	O	ON	OFF	Acknowledge output to the master microcomputer (IC501)
11	CPUSC	O	–	–	On the microcomputer communication, serial clock output
12	CPUSO	O	–	–	On the microcomputer communication, serial data output
13	CPUSI	I	–	–	On the microcomputer communication, serial data input
14	MOTUP	O	OFF	ON	UP output for the volume with motor
15	MOTDN	O	OFF	ON	DOWN output for the volume with motor
16	CLKCE	O	ON	OFF	Chip enable output to the real time clock (IC712)
17	RMC	I	–	–	Received remote control signal input
18	MSTSY	I	ON	OFF	Sync input from the master microcomputer (IC501)
19	TIMIN	I	ON	OFF	The real time clock (IC712) timing signal input
20	XRST	I	RESET	RELEASE	Microcomputer reset signal input
21	TEST	I	–	↑ –	Test mode (Normally GND level)
22	EXPST	O	LATCH	ACTIVE	Strobe signal output to the output expansion IC (IC707)
23	METCE	O	↓ ON	OFF	Chip enable signal output to the meter IC (IC709)
24	WR	O	ON	OFF	WRITE signal output to S-RAM (IC708) and the meter IC (IC709)
25	RD	O	ON	OFF	READ signal output to S-RAM (IC708) and the meter IC (IC709)
26	RAMCE	O	ON	OFF	Chip enable signal output to S-RAM (IC708)
27	ROMSO	O	–	–	Serial data output to E^{2}PROM (IC702)
28	ROMSC	O	–	–	Serial clock signal output to E^{2}PROM (IC702)
29	ROMCE	O	ON	OFF	Chip enable signal output to E^{2}PROM (IC702)
30	OSCI	O	–	–	Ceramic oscillator for clock connecting terminal (4.19 MHz)
31	OSCO	O	–	–	Ceramic oscillator for clock connecting terminal (4.19 MHz)
32	GND	O	–	–	GND
33 – 40	T0 – T7	O	OFF	ON	FL grid output
41 – 48	S31 – S24	O	OFF	ON	FL segment output
49	VFLT	–	–	–	B+ for FL (+35 V)
50 – 73	S23 – S0	O	OFF	ON	FL segment output
74	VDD	–	–	–	+5 V power supply
75 – 80	D0 – D5	I/O	–	–	Data bus

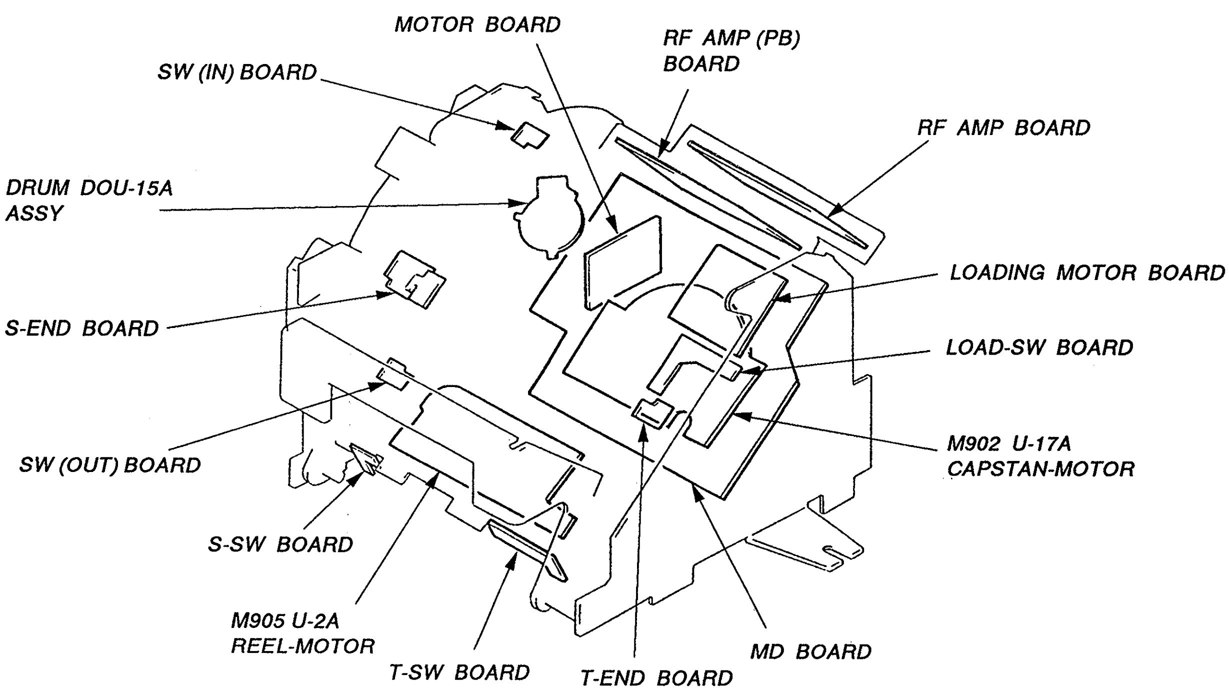
4-2. BLOCK DIAGRAM



- **CIRCUIT BOARDS LOCATION**



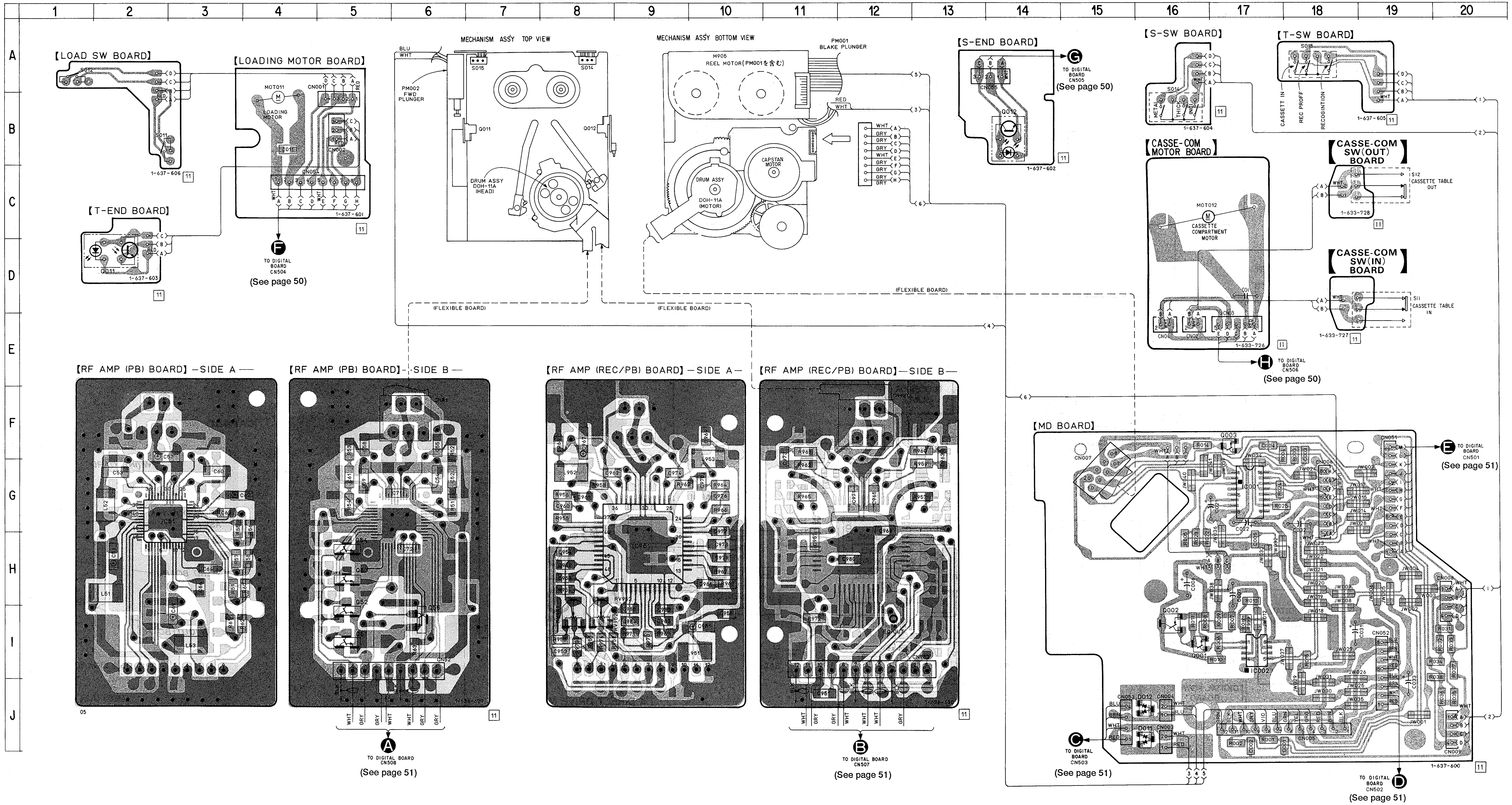
(DATM-51)



4-3. PRINTED WIRING BOARDS – RF/MD SECTION –

- **Semiconductor Location**

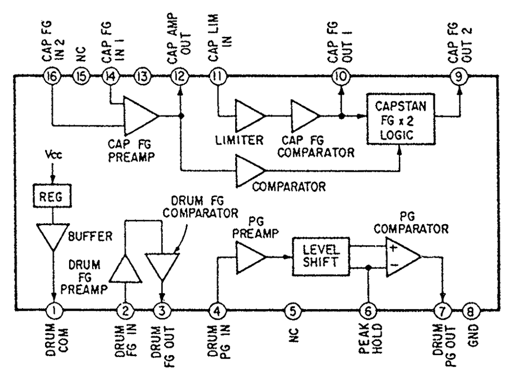
Ref. No.	Location
D011	J-16
D012	J-16
IC51	G-2
IC001	G-17
IC002	I-17
IC951	H-9
Q51	I-5
Q52	I-5
Q53	H-5
Q54	H-5
Q55	I-6
Q001	I-16
Q002	I-16
Q003	F-17
Q011	D-2
Q012	B-14



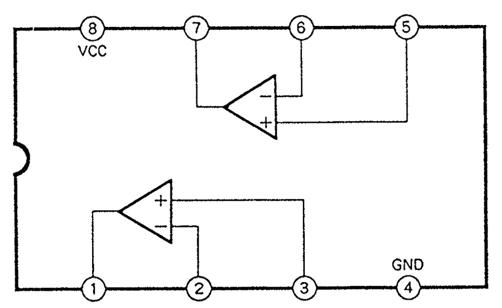
Note on Mounting Diagram:

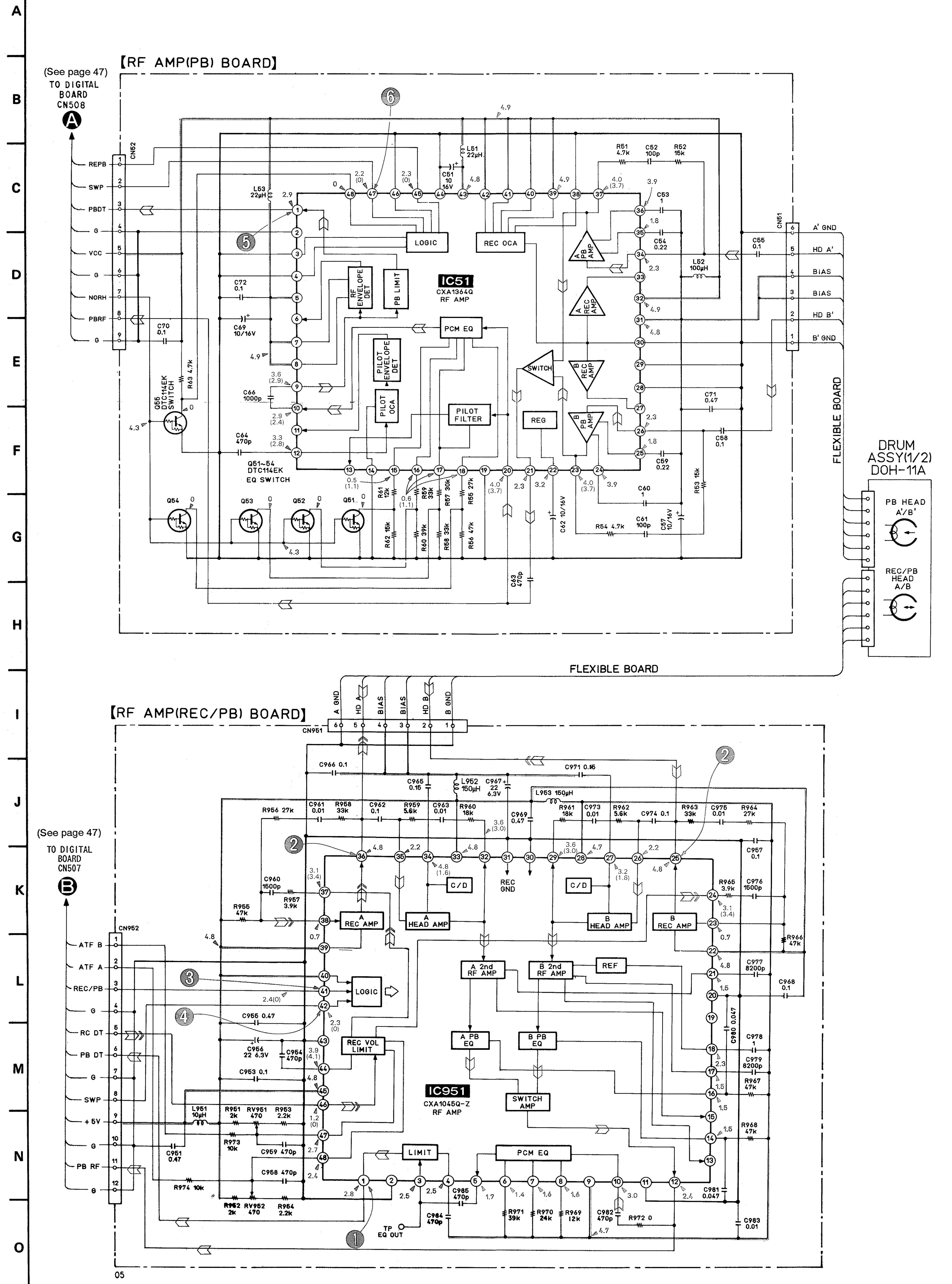
- o—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- Jumper wire connected to the ground pattern on the component side.
- Pattern on the side which is seen.
- Pattern of the rear side.

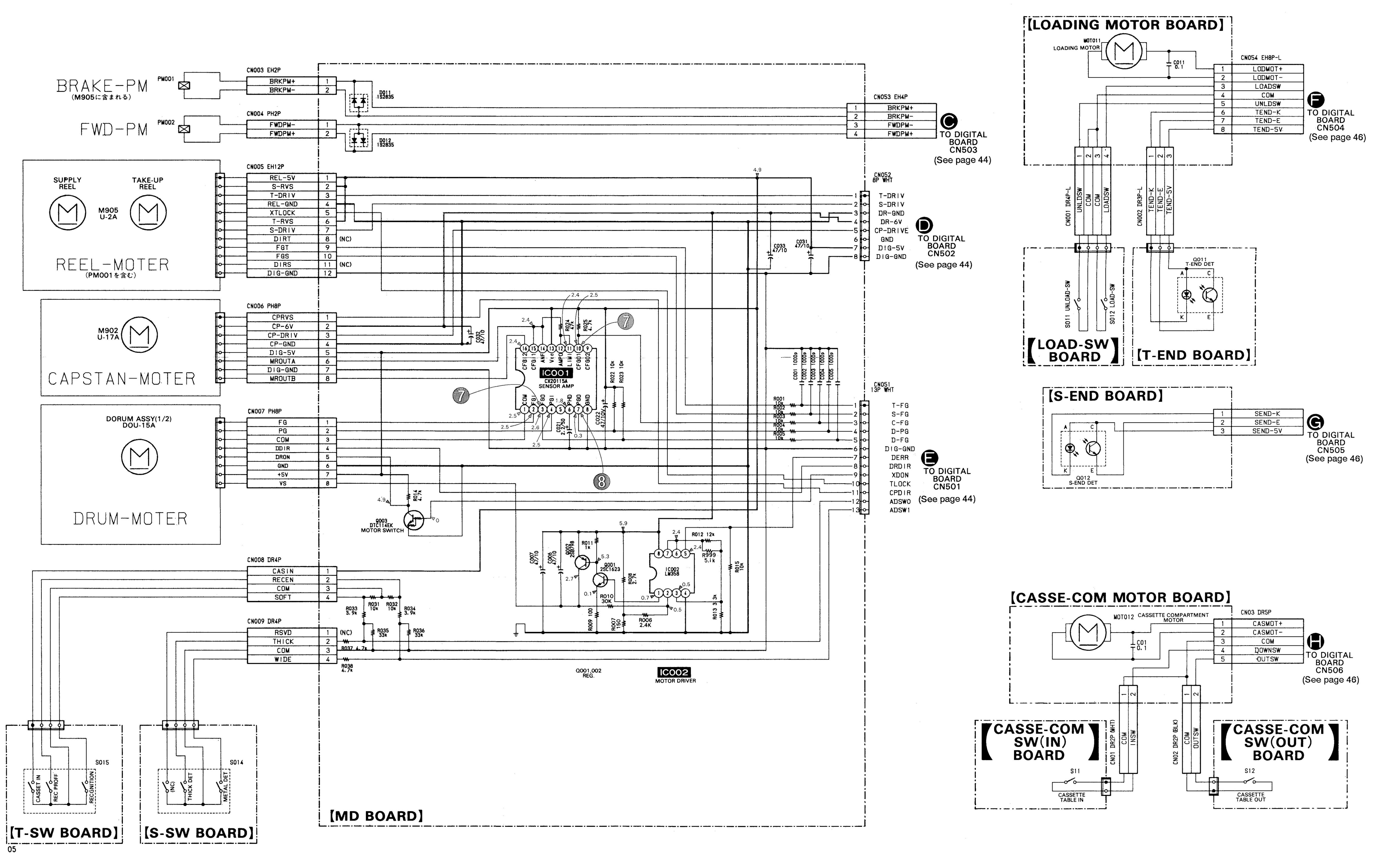
IC001 CX20115A



IC002 LM358M







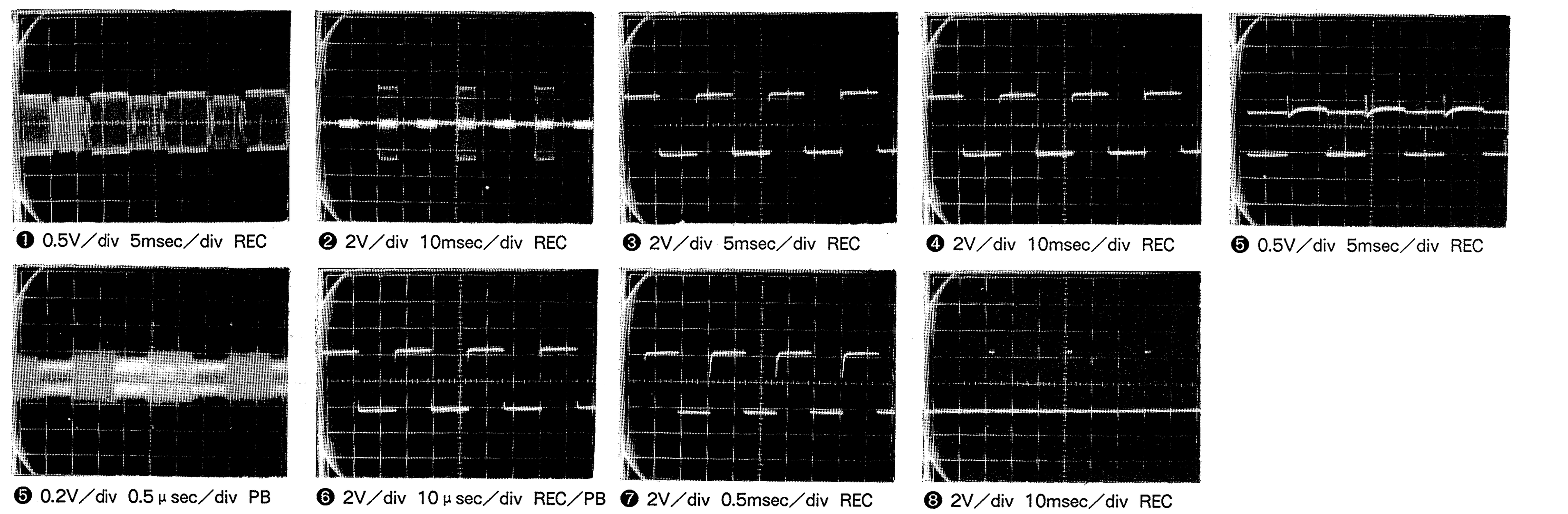
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- (fusible resistor symbol) : fusible resistor.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

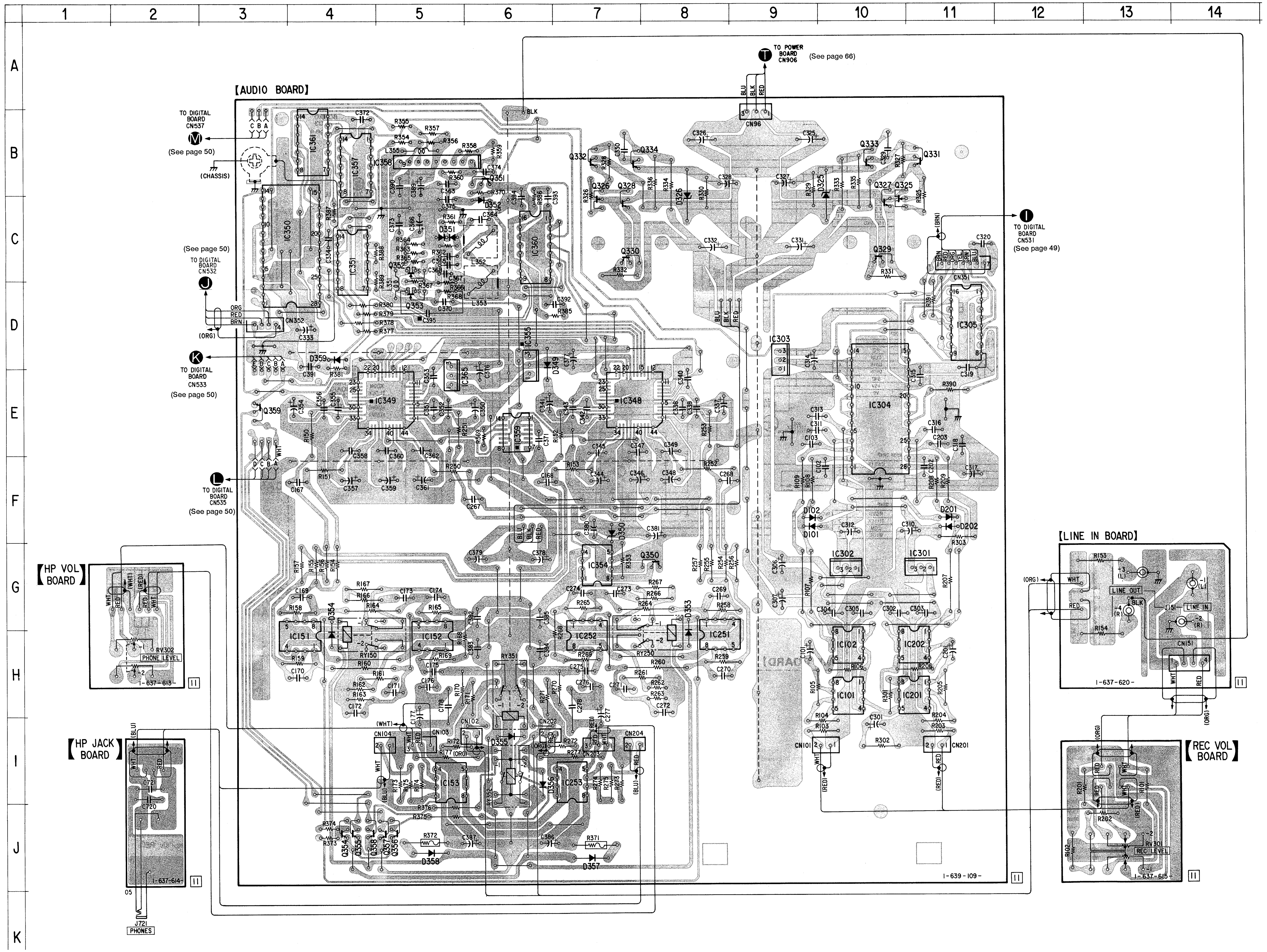
- (line) : B + Line.
- (dashed line) : B – Line.
- (box) : adjustment for repair.

- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : REC/PLAY
  ( ) : PLAY
- Voltages are taken with a VOM (input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Wavefroms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to wavefroms.
- Signal path.
  (arrow) : PB
  (double arrow) : REC



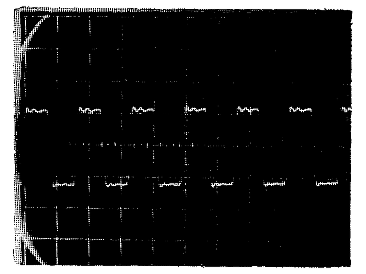
❶ 0.5V/div 5msec/div REC
❷ 2V/div 10msec/div REC
❸ 2V/div 5msec/div REC
❹ 2V/div 10msec/div REC
❺ 0.5V/div 5msec/div REC
❺ 0.2V/div 0.5μsec/div PB
❻ 2V/div 10μsec/div REC/PB
❼ 2V/div 0.5msec/div REC
❽ 2V/div 10msec/div REC

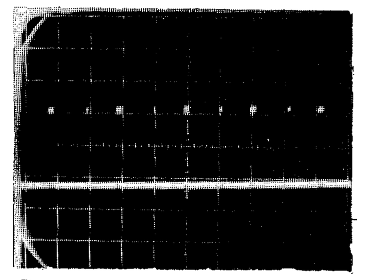
• See page 26 for note.

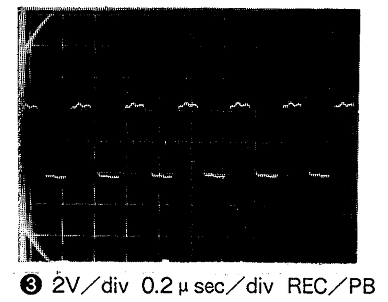


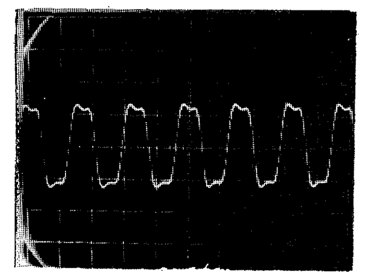
• Semiconductor Location

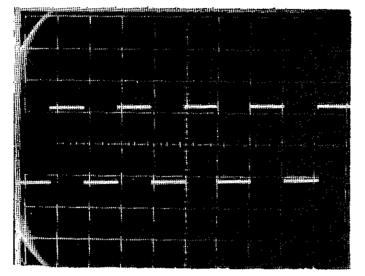
Ref. No.	Location	Ref. No.	Location
D101	F-9	IC348	E-7
D102	F-9	IC349	E-5
D201	F-11	IC350	C-3
D202	F-11	IC351	C-4
D325	B-10	IC354	G-7
D326	B-8	IC355	D-6
D349	D-6	IC356	E-5
D350	F-7	IC357	C-6
D351	C-5	IC358	B-5
D352	C-6	IC359	E-6
D353	H-8	IC360	C-6
D354	H-4	IC361	B-4
D355	I-6		
D356	I-6	Q325	C-10
D357	J-7	Q326	B-7
D358	J-5	Q327	C-10
D359	D-4	Q328	B-7
		Q329	C-10
IC101	H-10	Q330	C-7
IC102	H-10	Q331	B-11
IC151	H-4	Q332	B-7
IC152	H-5	Q333	B-10
IC153	I-5	Q334	B-7
IC201	H-10	Q350	G-8
IC202	H-10	Q351	B-6
IC251	H-8	Q352	C-5
IC252	H-7	Q353	D-5
IC253	I-7	Q354	J-4
IC301	G-11	Q355	J-4
IC302	G-10	Q356	J-5
IC303	D-9	Q357	J-5
IC304	E-10	Q358	J-4
IC305	D-11	Q359	E-3

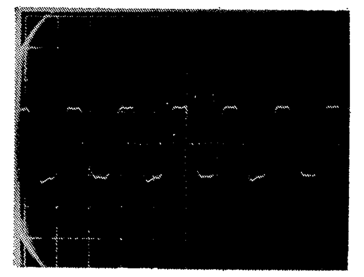

❶ 2V/div 0.2μsec/div REC/PB

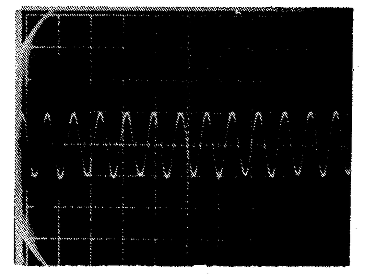

❷ 2V/div 10μsec/div REC

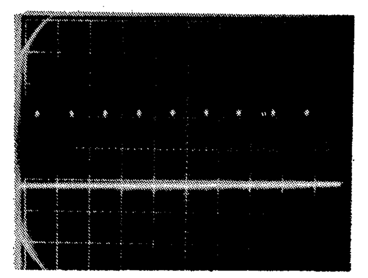

❸ 2V/div 0.2μsec/div REC/PB

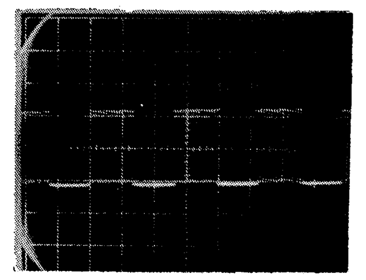

❹ 2V/div 0.1μsec/div REC/PB

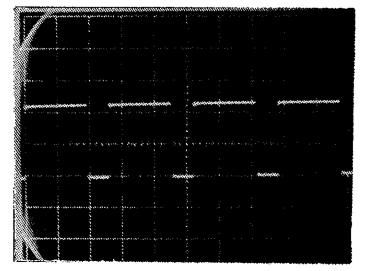

❺ 2V/div 10μsec/div REC

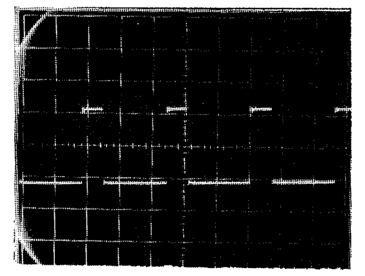

❻ 2V/div 0.1μsec/div REC/PB

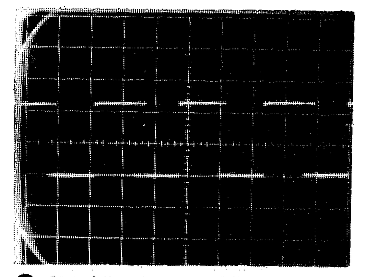

❼ 2V/div 0.1μsec/div REC/PB

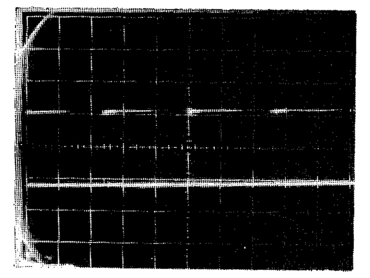

❽ 2V/div 0.1μsec/div REC

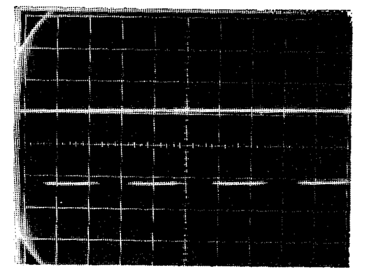

❾ 2V/div 1μsec/div REC/PB

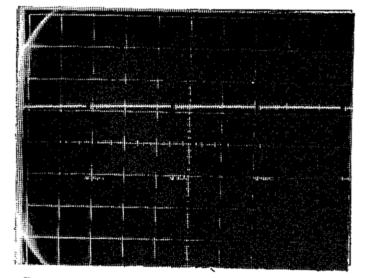

❿ 2V/div 1μsec/div REC/PB

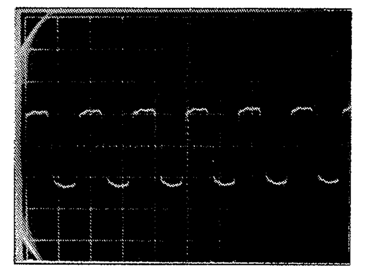

⓫ 2V/div 1μsec/div REC/PB

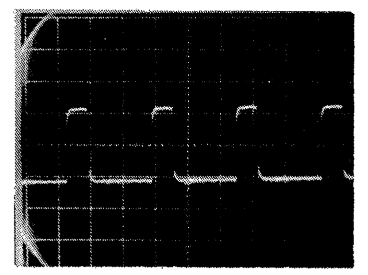

⓬ 2V/div 1μsec/div REC

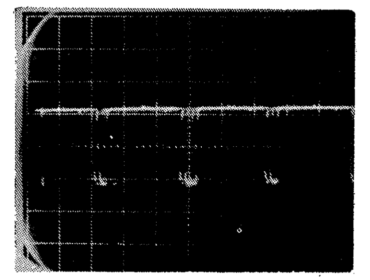

⓬ 2V/div 1μsec/div PB

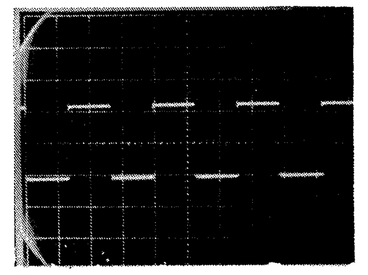

⓭ 2V/div 1μsec/div REC

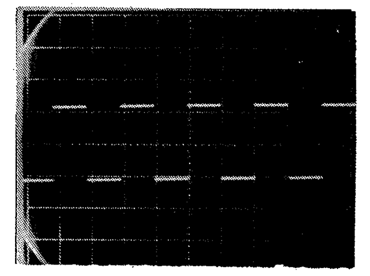

⓭ 2V/div 1μsec/div PB

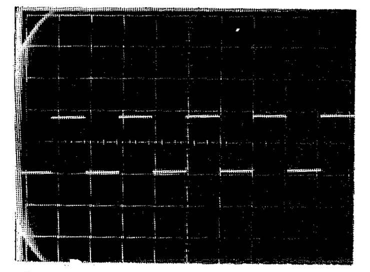

⓮ 2V/div 0.2μsec/div REC

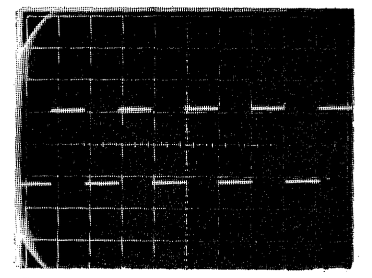

⓯ 2V/div 1μsec/div REC

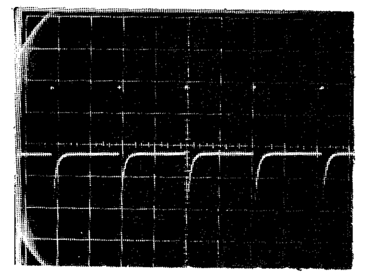

⓯ 2V/div 1μsec/div PB

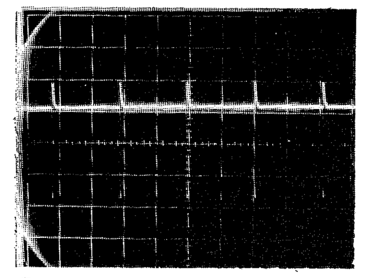

⓰ 2V/div 2μsec/div REC

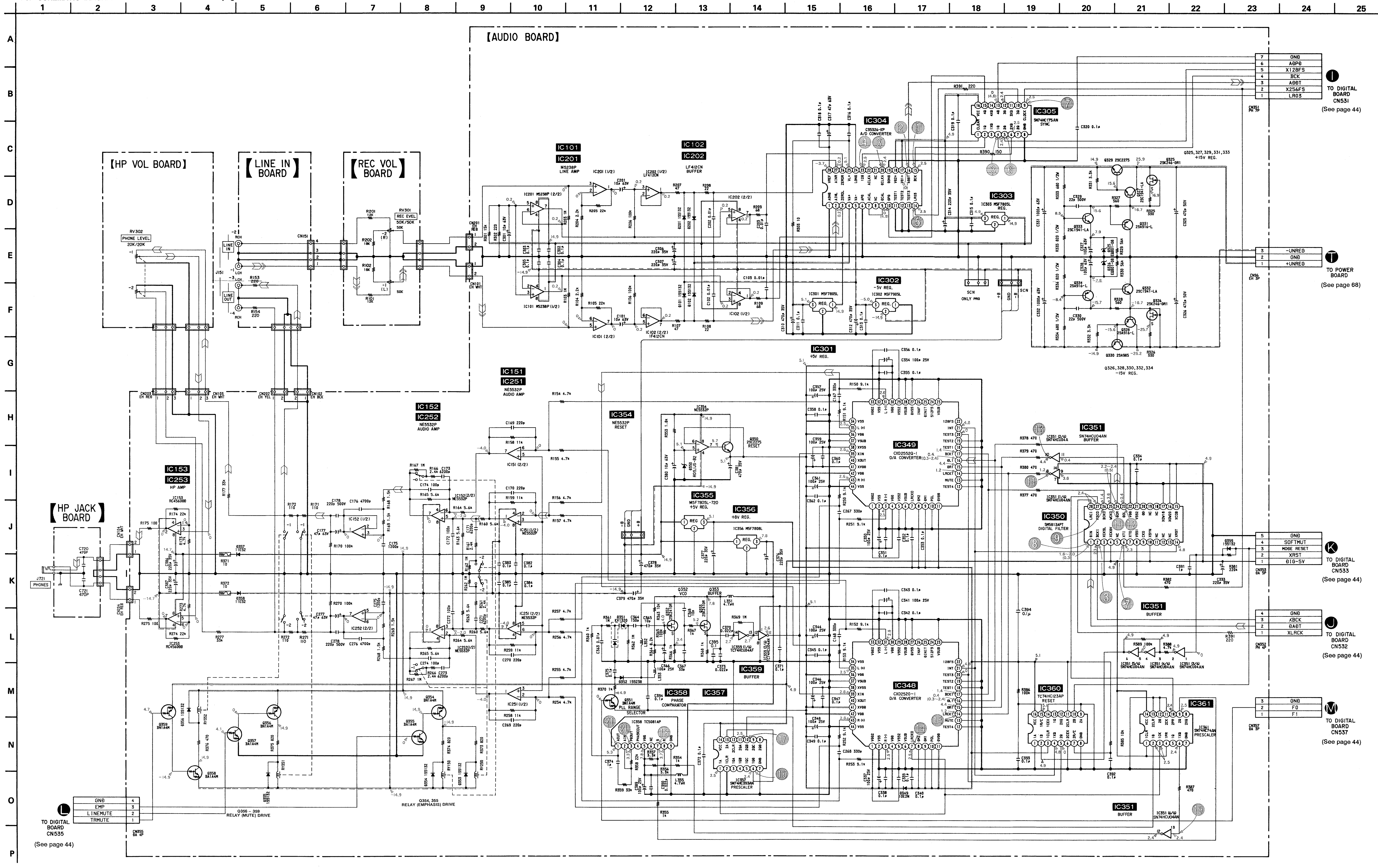

⓱ 2V/div 10μsec/div REC


⓲ 2V/div 10μsec/div REC

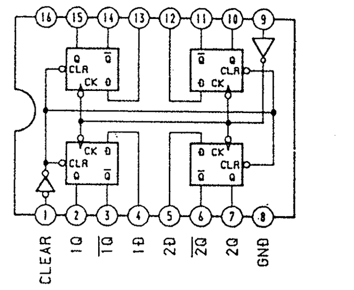

⓳ 2V/div 10μsec/div REC


⓴ 2V/div 10μsec/div REC

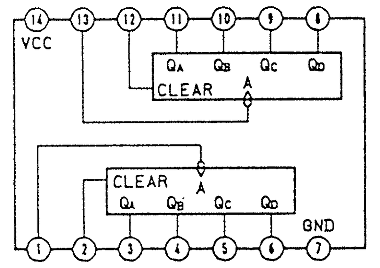

㉑ 1V/div 10μsec/div REC



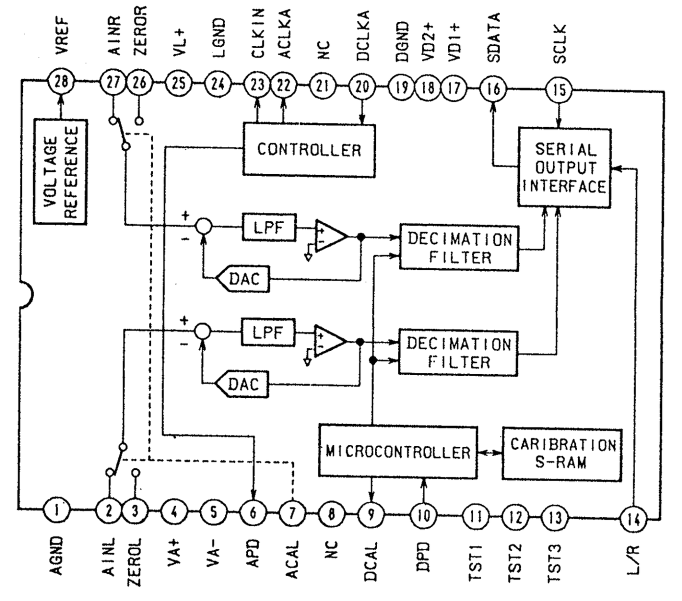
IC305 74HC175



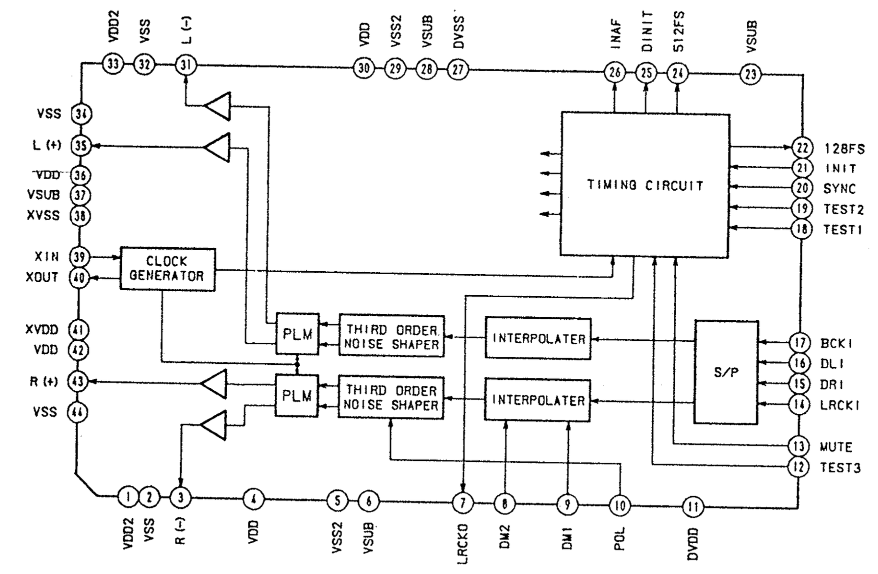
IC357 SN74HC393N



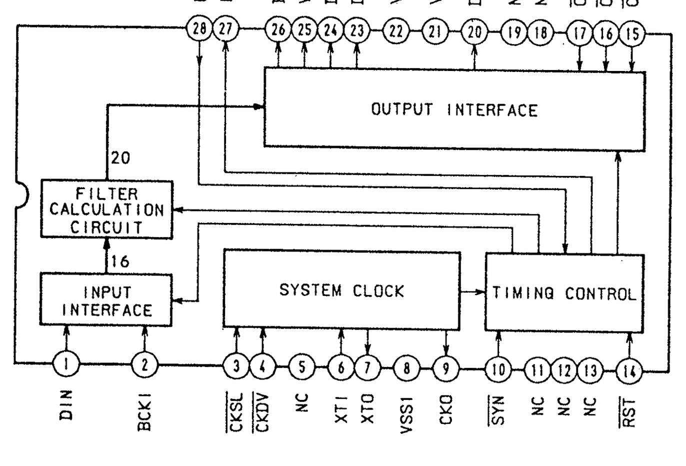
IC304 CS5326-KP



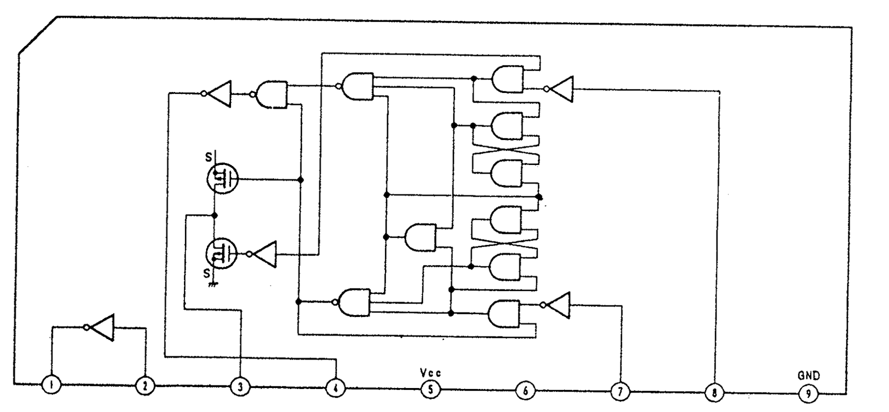
IC348 CXD2552



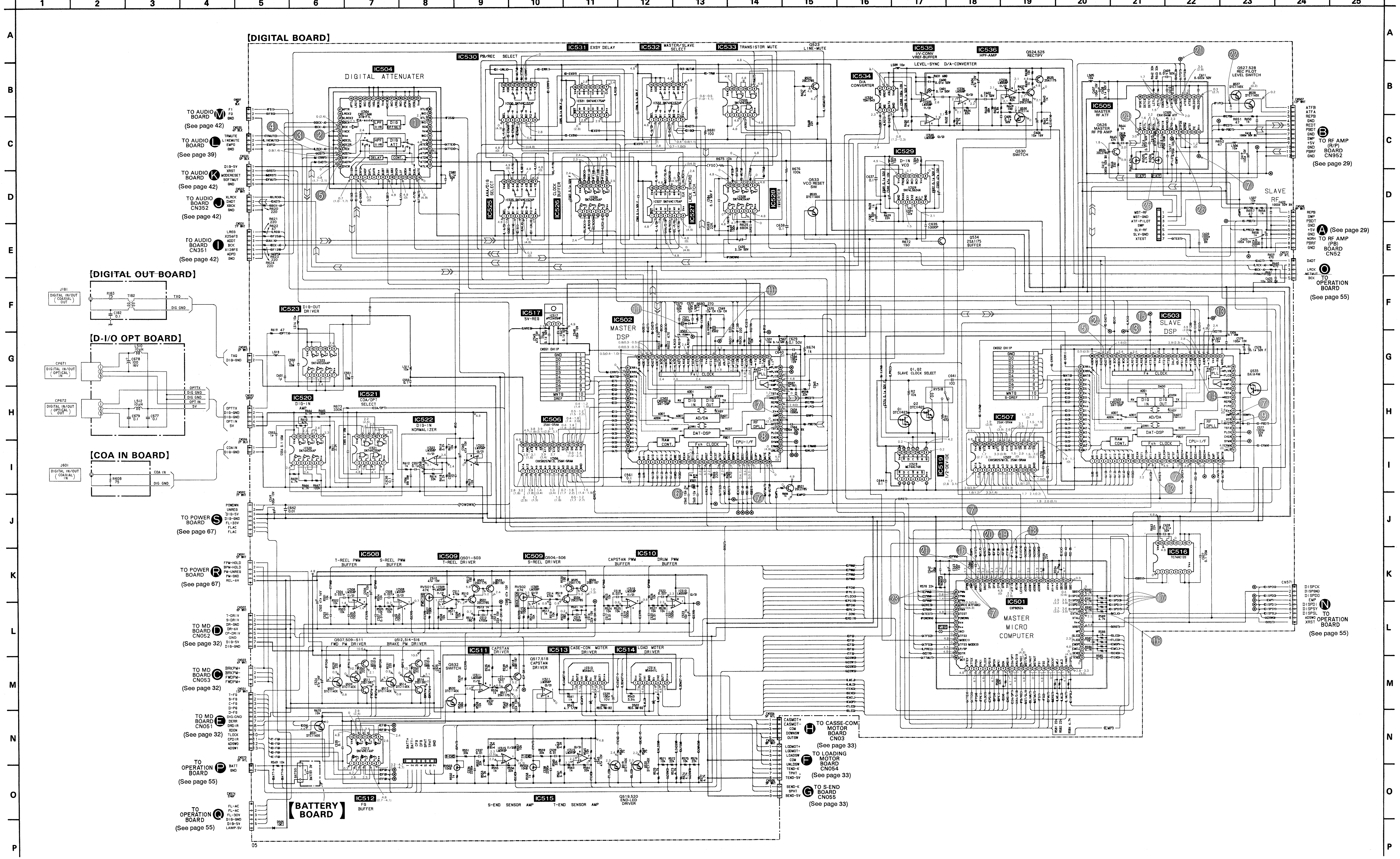
IC350 SM5813APT



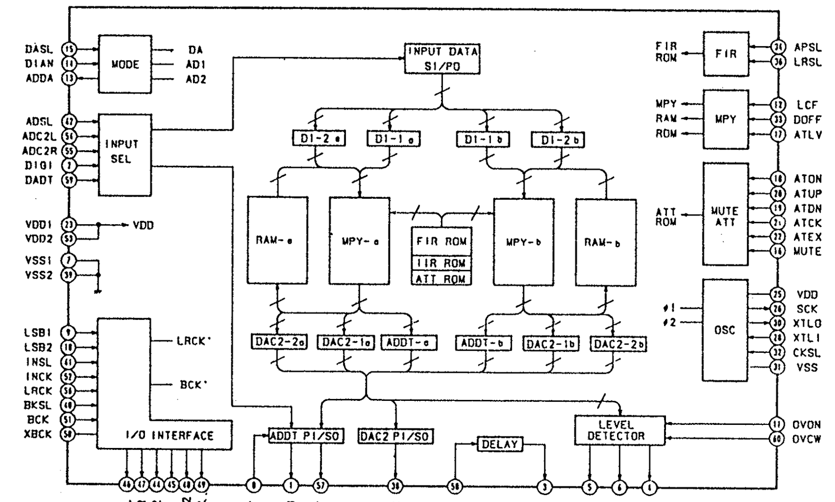
IC358 TC5081AP



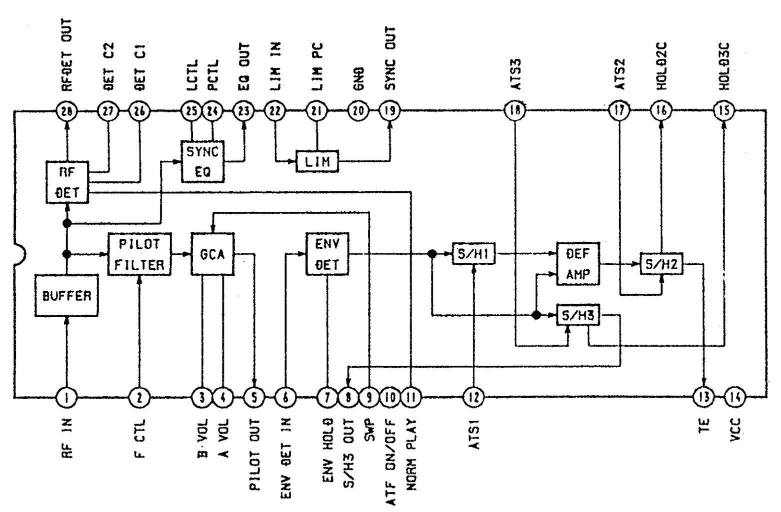
• See page 31 for note.



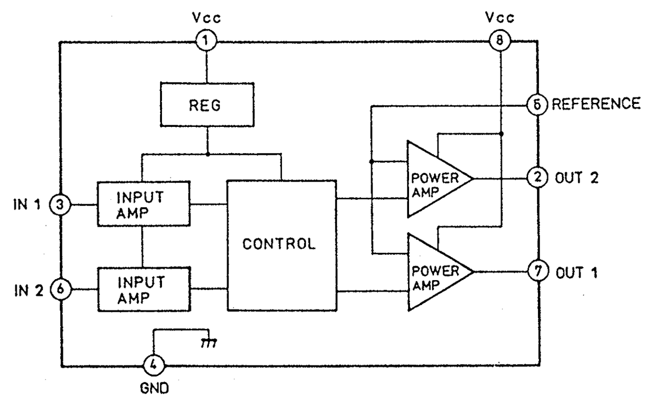
IC504 CXD1136Q



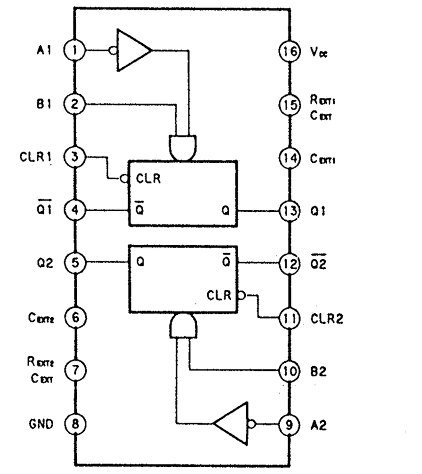
IC505 CXA1046M



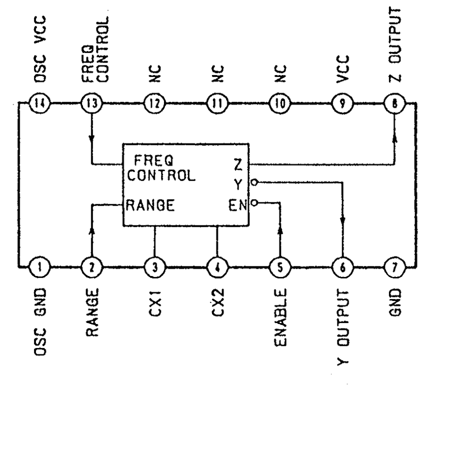
IC513, 514 M54641L



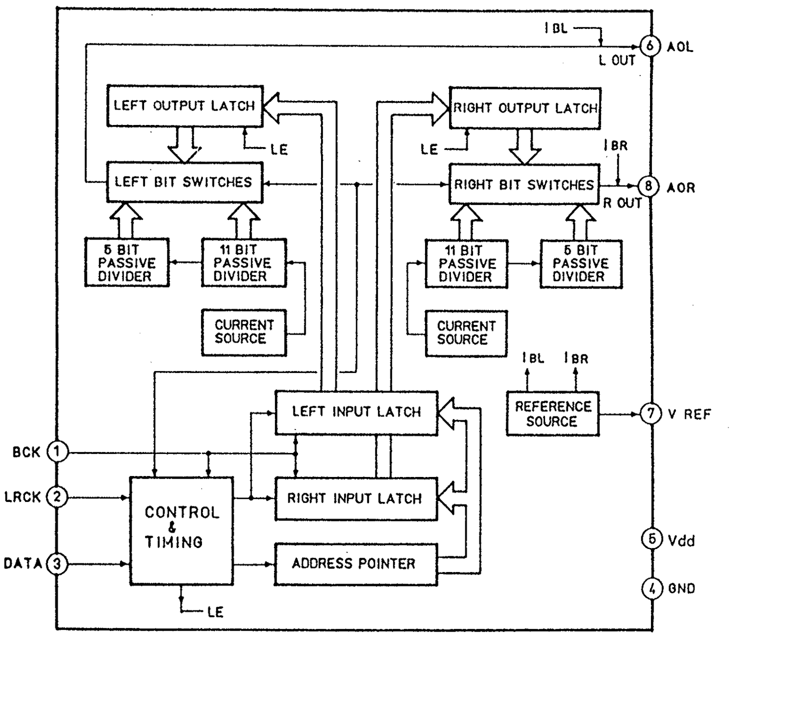
IC516 TC74HC123AP



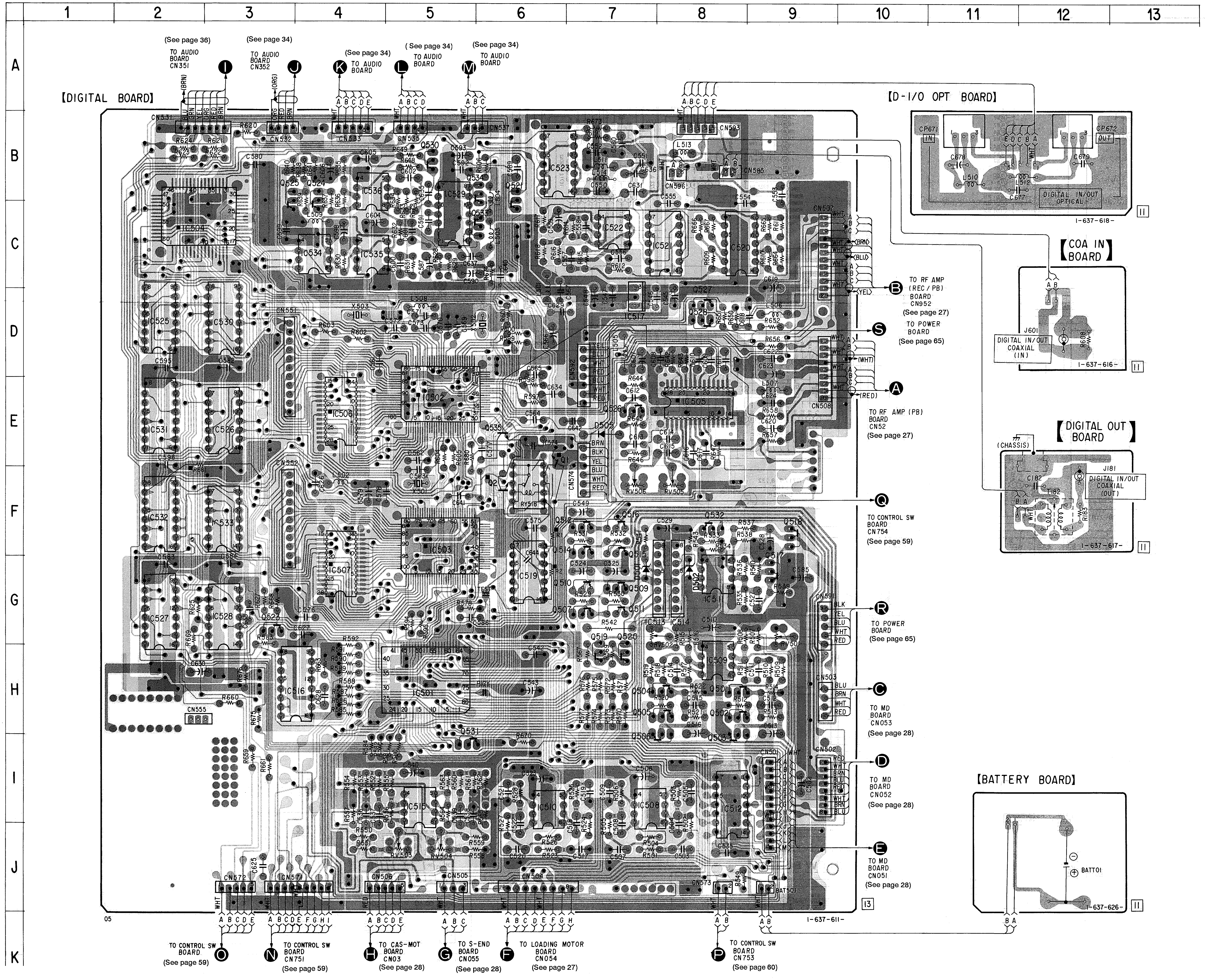
IC529 74LS624



IC534 TDA1543

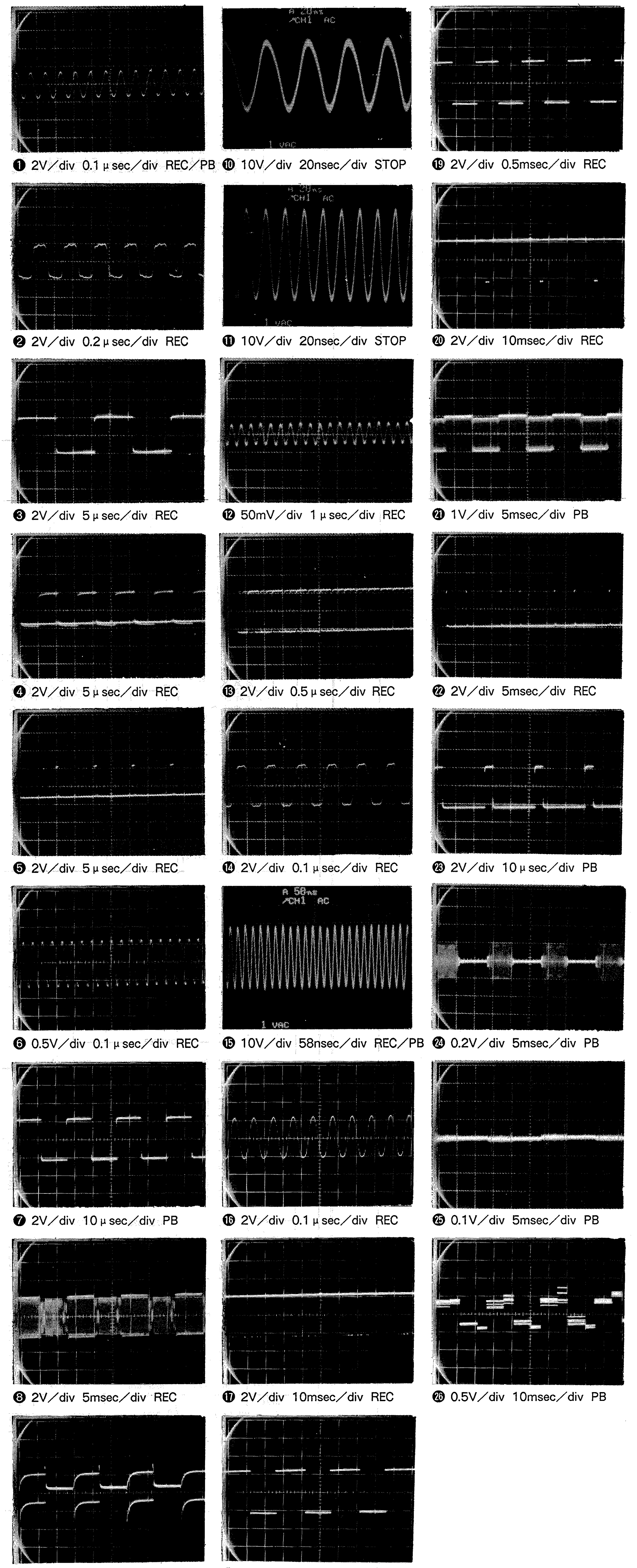


• See page 26 for note.



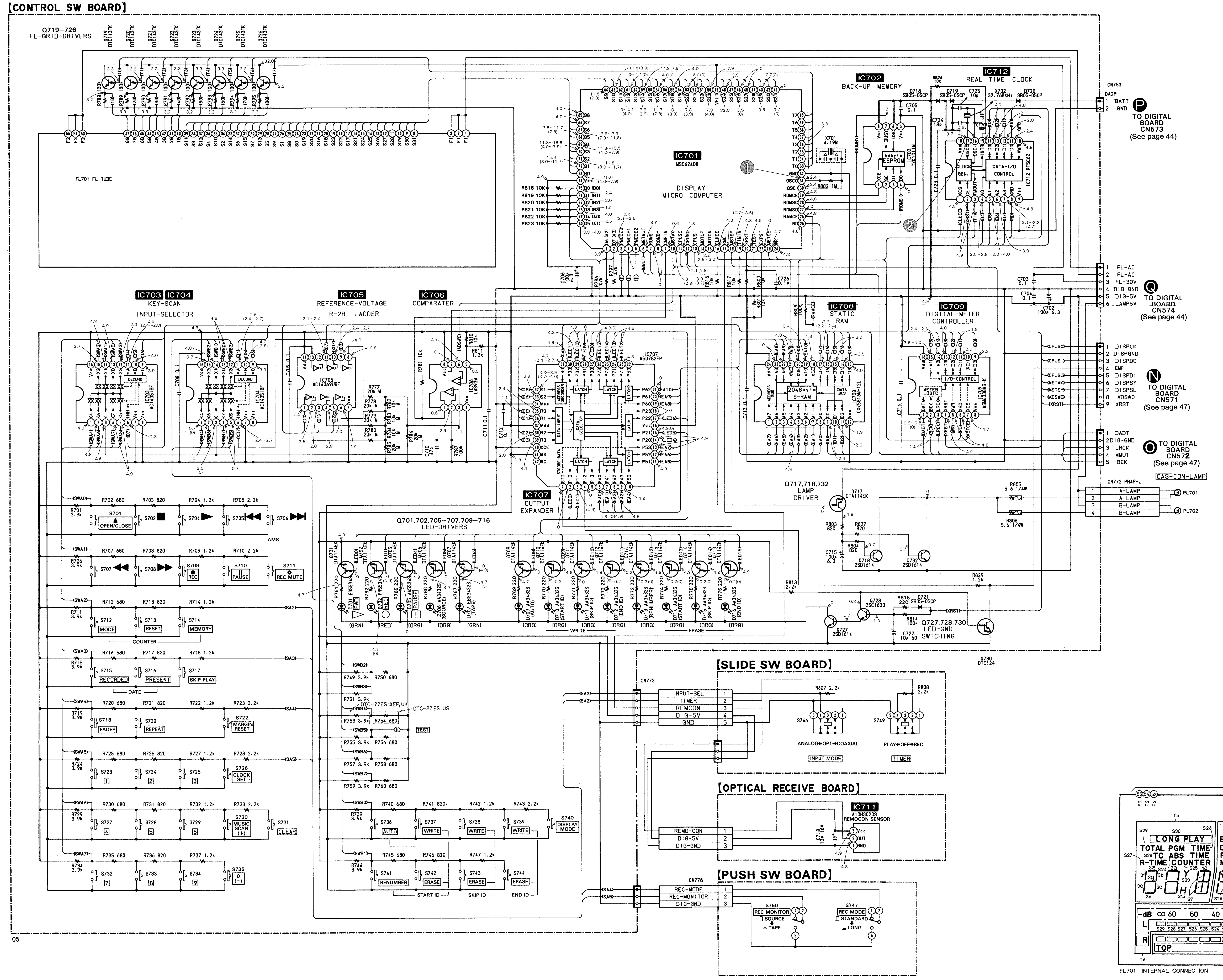
• Semiconductor Location

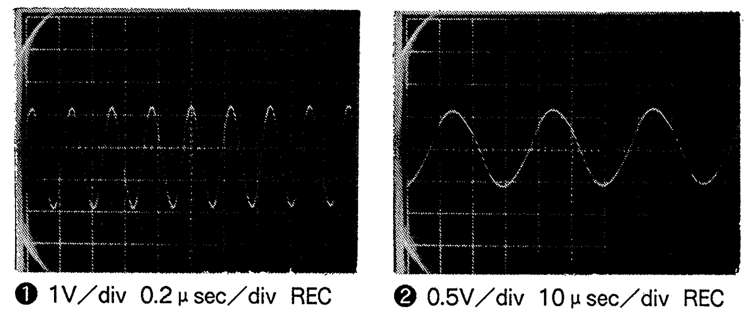
Ref. No.	Location	Ref. No.	Location
D501	G-7	IC534	C-4
D502	G-8	IC535	C-4
D505	E-7	IC536	B-4
CP671	B-11	Q1	E-6
CP672	B-12	Q2	F-6
		Q501	H-8
IC501	H-5	Q502	H-8
IC502	E-5	Q503	I-8
IC503	F-5	Q504	H-8
IC504	C-2	Q505	H-8
IC505	E-8	Q506	I-8
IC506	E-4	Q507	G-7
IC507	G-4	Q509	G-7
IC508	I-7	Q510	G-7
IC509	H-8	Q511	G-7
IC510	I-6	Q512	F-7
IC511	G-8	Q514	F-7
IC512	I-8	Q515	F-7
IC513	G-8	Q516	F-7
IC514	G-8	Q517	G-9
IC515	I-5	Q518	F-9
IC516	H-4	Q519	H-7
IC517	D-7	Q520	H-7
IC519	G-6	Q521	B-6
IC520	C-8	Q523	G-3
IC521	C-8	Q524	B-4
IC522	C-7	Q525	B-3
IC523	B-6	Q526	E-7
IC525	D-2	Q527	D-8
IC526	E-3	Q528	D-8
IC527	G-2	Q530	B-5
IC528	G-3	Q531	I-5
IC529	C-5	Q532	F-8
IC530	D-3	Q533	C-6
IC531	E-2	Q534	B-6
IC532	F-2	Q535	E-6
IC533	F-3		



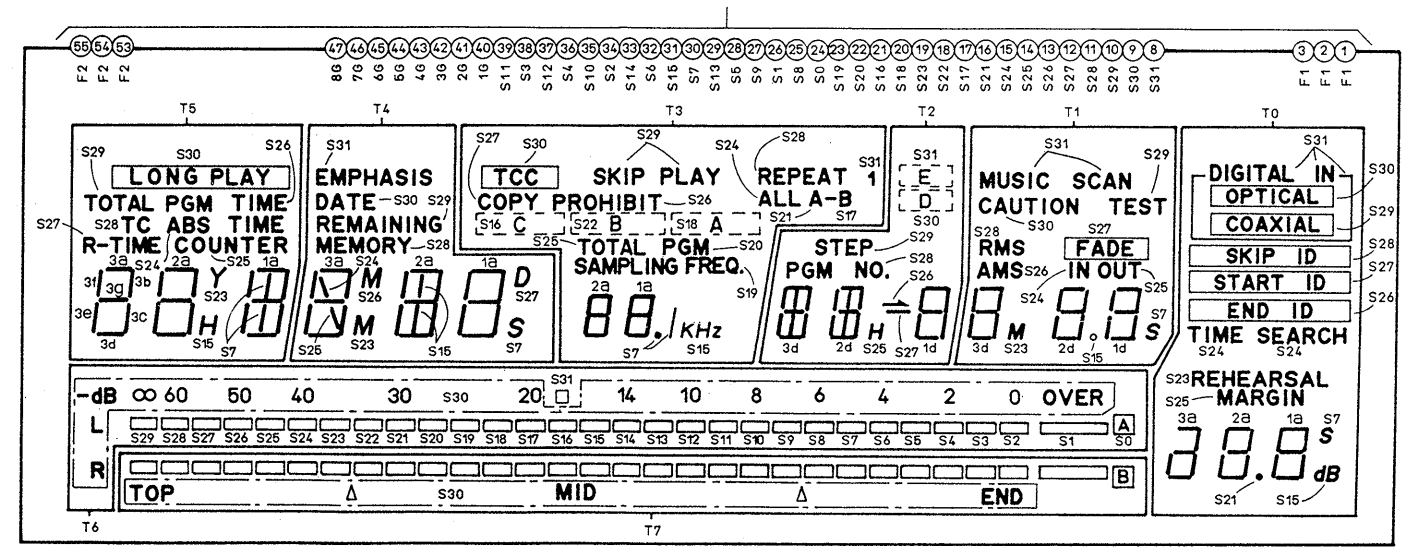
❶ 2V/div 0.1 μsec/div REC/PB
❷ 2V/div 0.2 μsec/div REC
❸ 2V/div 5 μsec/div REC
❹ 2V/div 5 μsec/div REC
❺ 2V/div 5 μsec/div REC
❻ 0.5V/div 0.1 μsec/div REC
❼ 2V/div 10 μsec/div PB
❽ 2V/div 5msec/div REC
❾ 0.5V/div 5msec/div REC
❿ 10V/div 20nsec/div STOP
⓫ 10V/div 20nsec/div STOP
⓬ 50mV/div 1 μsec/div REC
⓭ 2V/div 0.5 μsec/div REC
⓮ 2V/div 0.1 μsec/div REC
⓯ 10V/div 58nsec/div REC/PB
⓰ 2V/div 0.1 μsec/div REC
⓱ 2V/div 10msec/div REC
⓲ 2V/div 0.5msec/div REC
⓳ 2V/div 0.5msec/div REC
⓴ 2V/div 10msec/div REC
㉑ 1V/div 5msec/div PB
㉒ 2V/div 5msec/div REC
㉓ 2V/div 10 μsec/div PB
㉔ 0.2V/div 5msec/div PB
㉕ 0.1V/div 5msec/div PB
㉖ 0.5V/div 10msec/div PB

 • See page 31 for note.





❶ 1V/div 0.2 μsec/div REC ❷ 0.5V/div 10 μsec/div REC




FL701 INTERNAL CONNECTION

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D701	C-23	Q701	C-14
D702	C-31	Q702	C-6
D705	C-25	Q705	C-11
D706	G-30	Q706	G-7
D707	G-31	Q707	G-6
D709	G-30	Q709	H-8
D710	F-30	Q710	G-8
D711	F-30	Q711	G-8
D712	E-30	Q712	F-8
D713	G-31	Q713	E-10
D714	F-31	Q714	E-10
D715	F-31	Q715	E-9
D716	E-31	Q716	E-9
D718	E-7	Q717	D-16
D719	E-7	Q718	C-16
D720	G-6	Q719	H-15
D721	E-8	Q720	H-14
		Q721	H-14
IC701	F-28	Q722	H-14
IC702	F-26	Q723	G-13
IC703	G-21	Q724	G-13
IC704	G-16	Q725	G-13
IC705	F-21	Q726	G-12
IC706	F-16	Q727	F-6
IC707	F-25	Q728	E-6
IC708	E-23	Q730	D-6
IC709	F-14	Q732	C-16
IC711	B-34		
IC712	C-8		

4-10. PRINTED WIRING BOARDS – CONTROL SECTION –

• See page 26 for note.

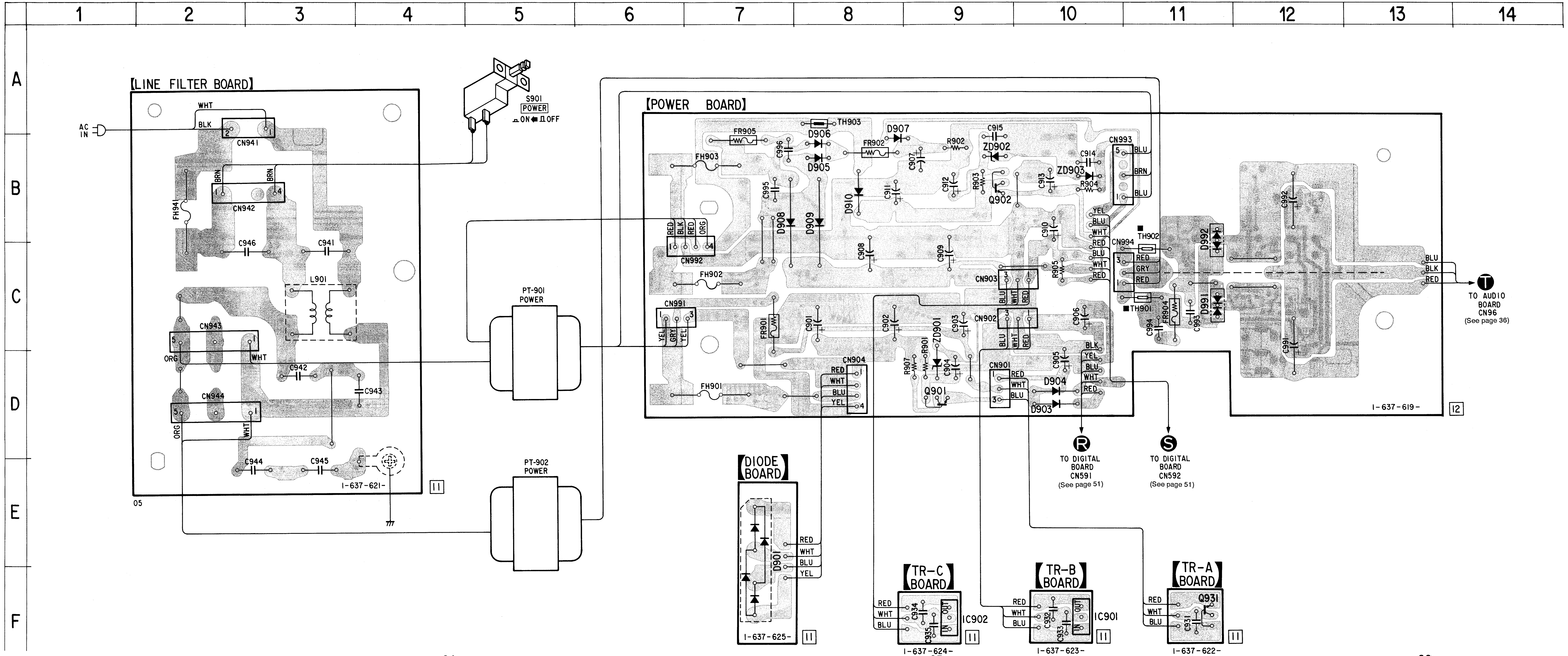


4-11. PRINTED WIRING BOARDS – POWER SECTION –

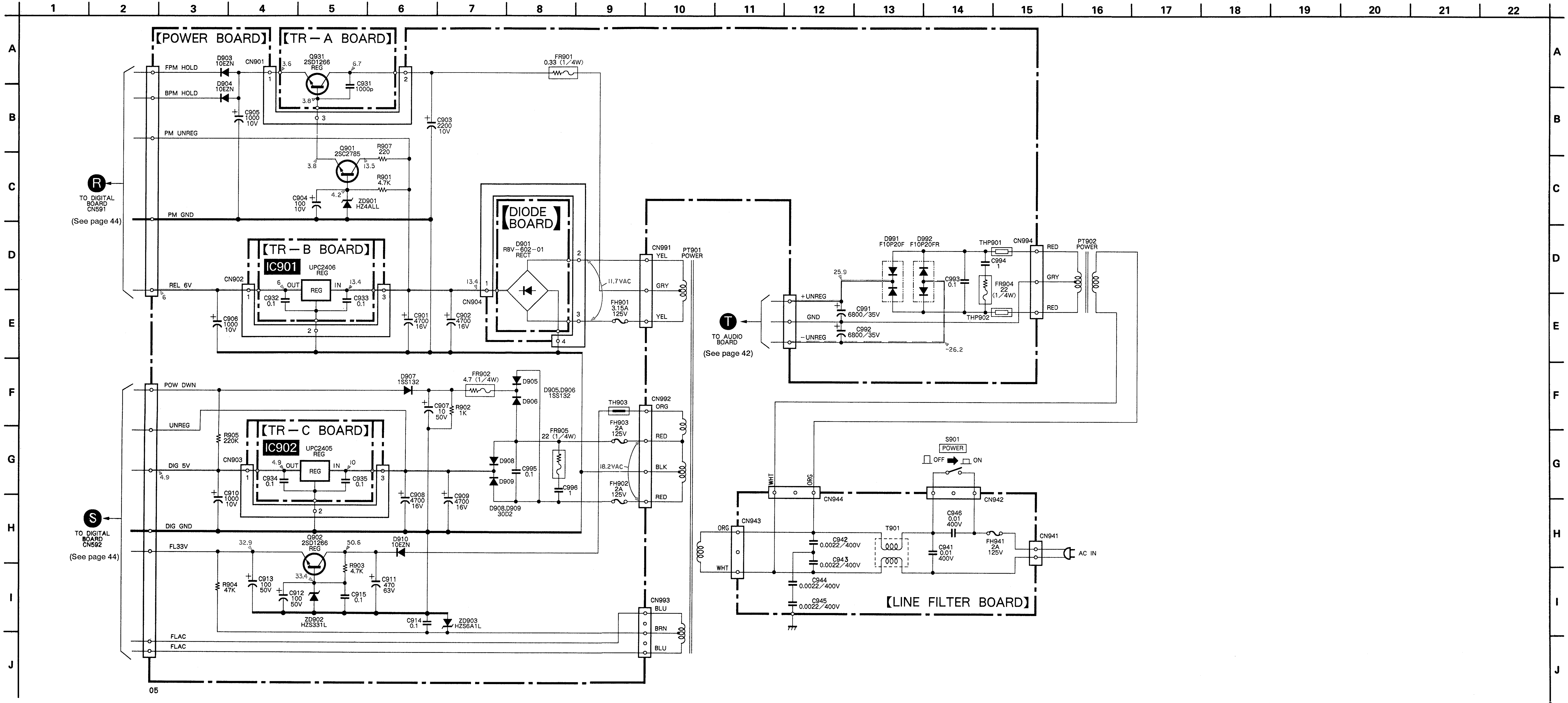
- See page 26 for note.

- Semiconductor Location

Ref. No.	Location
D901	E-7
D903	D-10
D904	D-10
D905	B-8
D906	B-8
D907	B-8
D908	B-7
D909	B-8
D910	B-8
D991	C-11
D992	C-11
ZD901	D-9
ZD902	B-9
ZD903	B-10
IC901	F-10
IC902	F-9
Q901	D-9
Q902	B-9
Q931	F-11



4-12. SCHEMATIC DIAGRAM – POWER SECTION – • See page 31 for note.



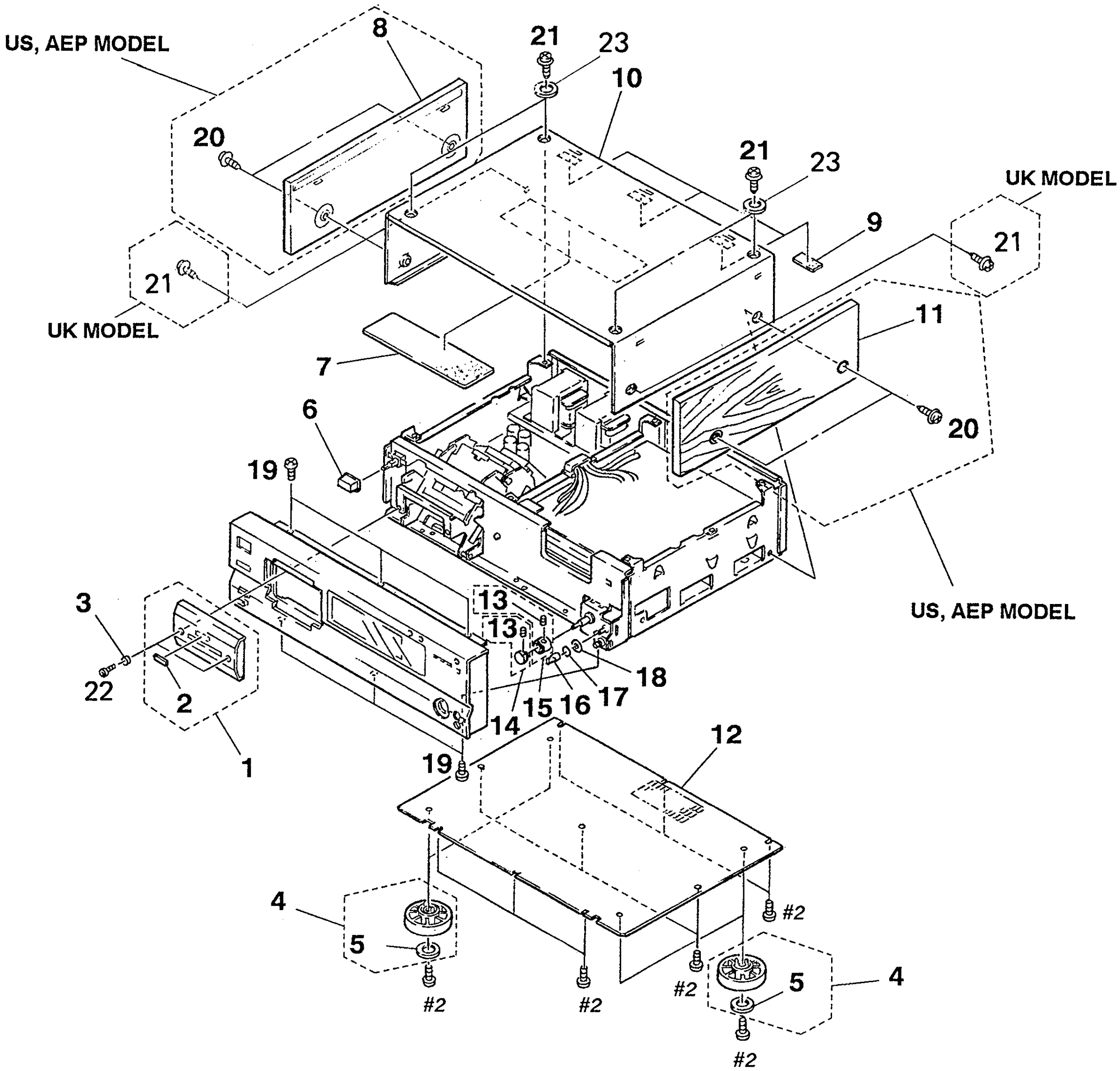
SECTION 5
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

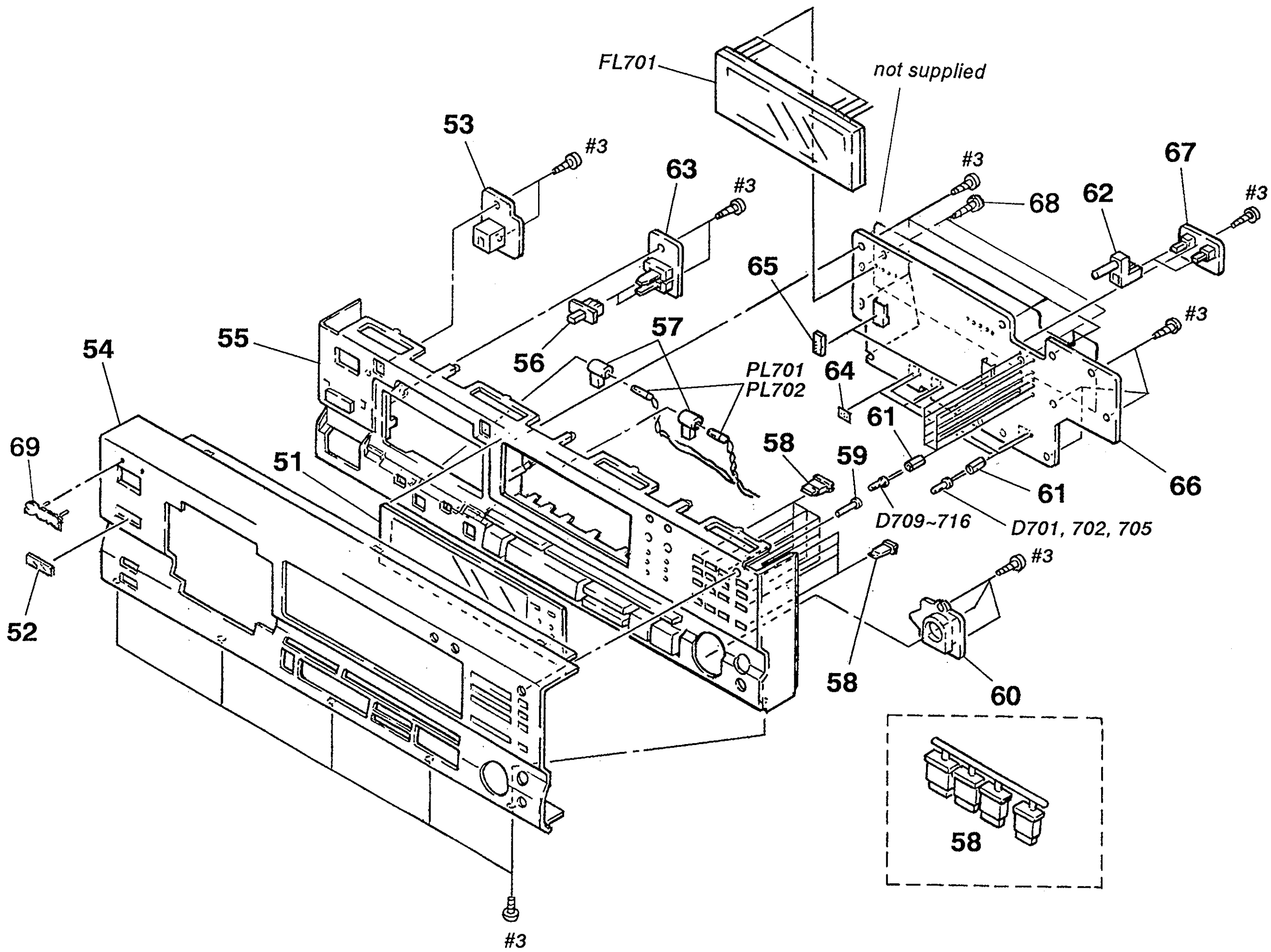
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	A-2003-671-A	PANEL (CASSETTE) ASSY... (BLACK)	
	A-2003-903-A	PANEL (CASSETTE) ASSY... (GOLD)	
2	4-936-615-01	PLATE (DAT LOGO), ORNAMENTAL... (BLACK)	
	4-936-615-11	PLATE (DAT LOGO), ORNAMENTAL... (GOLD)	
3	4-884-635-00	BASE, ORNAMENTAL... (BLACK)	
	4-884-635-21	BASE, ORNAMENTAL... (GOLD)	
4	X-3304-938-2	FOOT ASSY... (BLACK)	
	X-4928-110-1	FOOT ASSY... (GOLD)	
5	4-923-836-11	CUSHION	
6	4-923-520-01	KNOB, POWER... (BLACK)	
	4-923-520-12	KNOB, POWER... (GOLD)	
7	* 4-936-612-01	RUBBER (DAMPER)	
8	X-3362-385-1	PANEL (L) ASSY, SIDE... (BLACK)	(US, AEP)
	X-3363-177-1	PANEL (L) ASSY, SIDE... (GOLD)	
9	3-831-441-XX	CUSHION, SPEAKER	
10	4-925-039-41	CASE... (BLACK)	
	3-369-901-01	CASE... (GOLD)	
11	X-3362-386-1	PANEL (R) ASSY, SIDE... (BLACK)	(US, AEP)
	X-3363-178-1	PANEL (R) ASSY, SIDE... (GOLD)	
12	* 4-931-433-11	PLATE, BOTTOM	
13	3-701-506-01	SET SCREW, DOUBLE POINT 3X4	
14	X-3362-380-1	KNOB (REC-R) ASSY... (BLACK)	
	X-3363-175-1	KNOB (REC-R) ASSY... (GOLD)	
15	X-3362-381-1	KNOB (REC-L) ASSY... (BLACK)	
	X-3363-176-1	KNOB (REC-L) ASSY... (GOLD)	
16	3-354-931-01	KNOB (DIA. 10)... (BLACK)	
	3-354-931-31	KNOB (DIA. 10)... (GOLD)	
17	3-356-935-01	SPRING	
18	* 4-604-335-01	PLATE, BLIND (A)	
19	3-703-685-21	SCREW (+BV 3X8)	
20	4-933-446-01	SCREW (SIDE PANEL) (EXCEPT UK)	
21	3-704-366-01	SCREW (CASE) (M3X8)... (BLACK)	
	3-704-366-11	SCREW (CASE) (M3X8)... (GOLD)	
22	7-621-996-05	BOLT, HEXAGON SOCKET 2.6X5... (BLACK)	
	4-901-727-00	BOLT (M2.6X5), HOLE, HEXAGON... (GOLD)	
23	4-928-025-41	ESCUTCHEON (TOP PLATE)... (GOLD)	

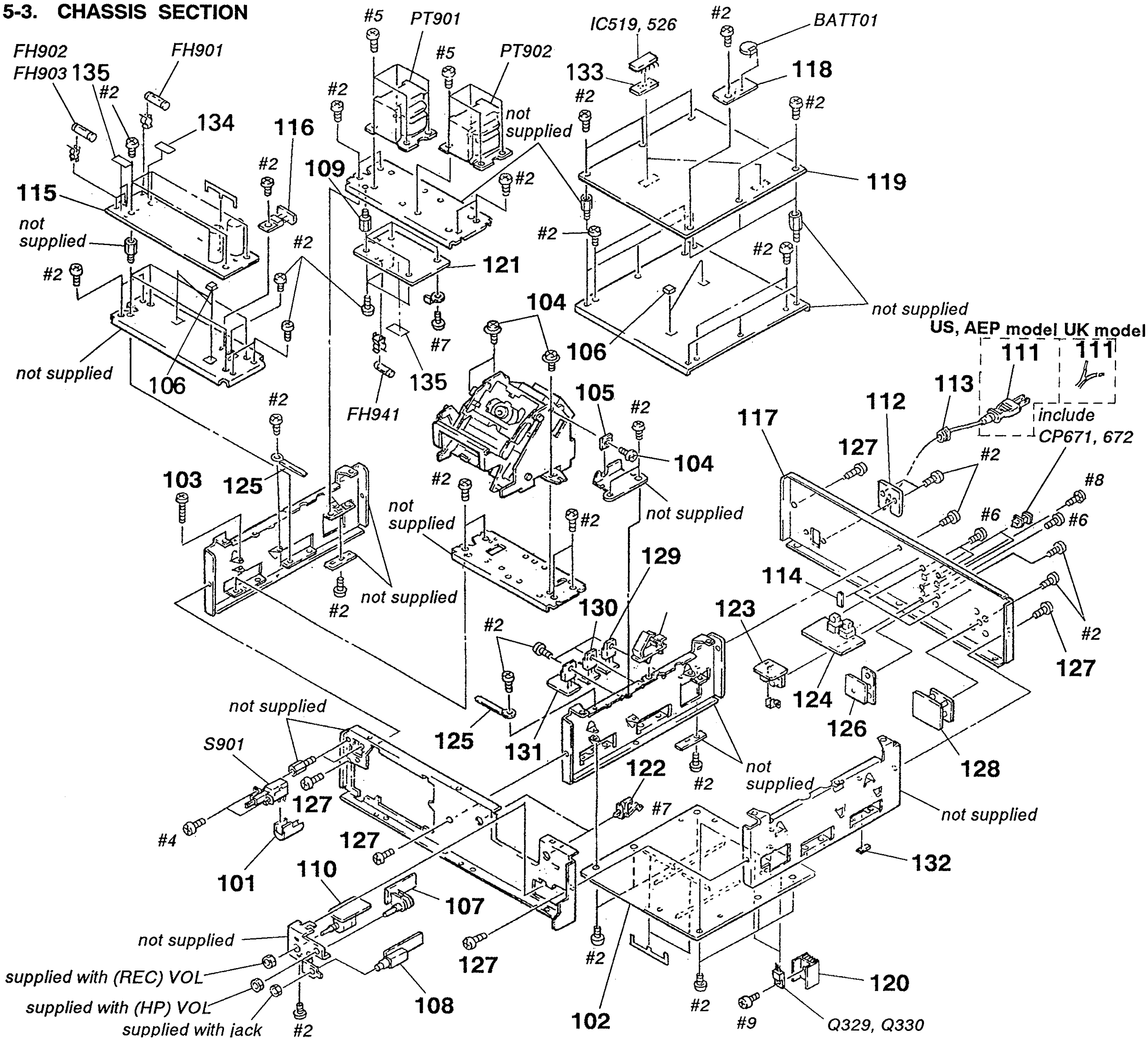
5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-364-924-01	WINDOW (FL TUBE)	
52	3-364-919-01	FILTER	
53	* 1-637-609-11	OPTICAL RECEIVE BOARD	
54	3-364-943-01	PANEL (FRONT)... (BLACK) (77ES: AEP)	
	3-364-943-12	PANEL (FRONT) (87ES)	
	3-364-943-21	PANEL (FRONT) (77ES: UK)	
	3-364-943-31	PANEL (FRONT)... (GOLD) (77ES: AEP)	
55	X-3362-388-1	ESCUTCHEON (PANEL) ASSY... (BLACK)	
	X-3363-174-1	ESCUTCHEON (PANEL) ASSY... (GOLD)	
56	3-307-538-21	KNOB, SWITCH, TIMER... (BLACK)	
	3-307-538-81	KNOB, SWITCH, TIMER... (GOLD)	
57	* 3-365-031-01	COVER, LAMP	
58	3-364-927-01	BUTTON (10 KEY)... (BLACK)	
	3-364-927-11	BOTTON (10 KEY)... (GOLD)	
59	4-934-031-01	BUTTON (DISPLAY)... (BLACK)	
	4-934-031-21	BUTTON (DISPLAY)... (GOLD)	

Ref. No.	Part No.	Description	Remark
60	3-364-928-01	ESCUTCHEON (R. V)... (BLACK)	
	3-364-928-11	ESCUTCHEON (R, V)... (GOLD)	
61	* 4-911-676-01	SPACER, LED	
62	4-923-879-01	BUTTON (DIA. 4)... (BLACK)	
	4-923-879-21	BUTTON (DIA. 4)... (GOLD)	
63	* 1-637-608-11	SLIDE SW BOARD	
64	3-831-441-11	CUSHION	
65	9-911-839-XX	CUSHION	
66	* A-2006-536-A	CONTROL SW BOARD, COMPLETE (US)	
	* A-2006-557-A	CONTROL SW BOARD, COMPLETE (AEP, UK)	
67	* 1-637-610-11	PUSH SW BOARD	
68	3-531-576-01	RIVET	
69	4-908-848-01	EMBLEM, SONY	
PL701	1-518-664-11	LAMP, PILOT	
PL702	1-518-664-11	LAMP, PILOT	

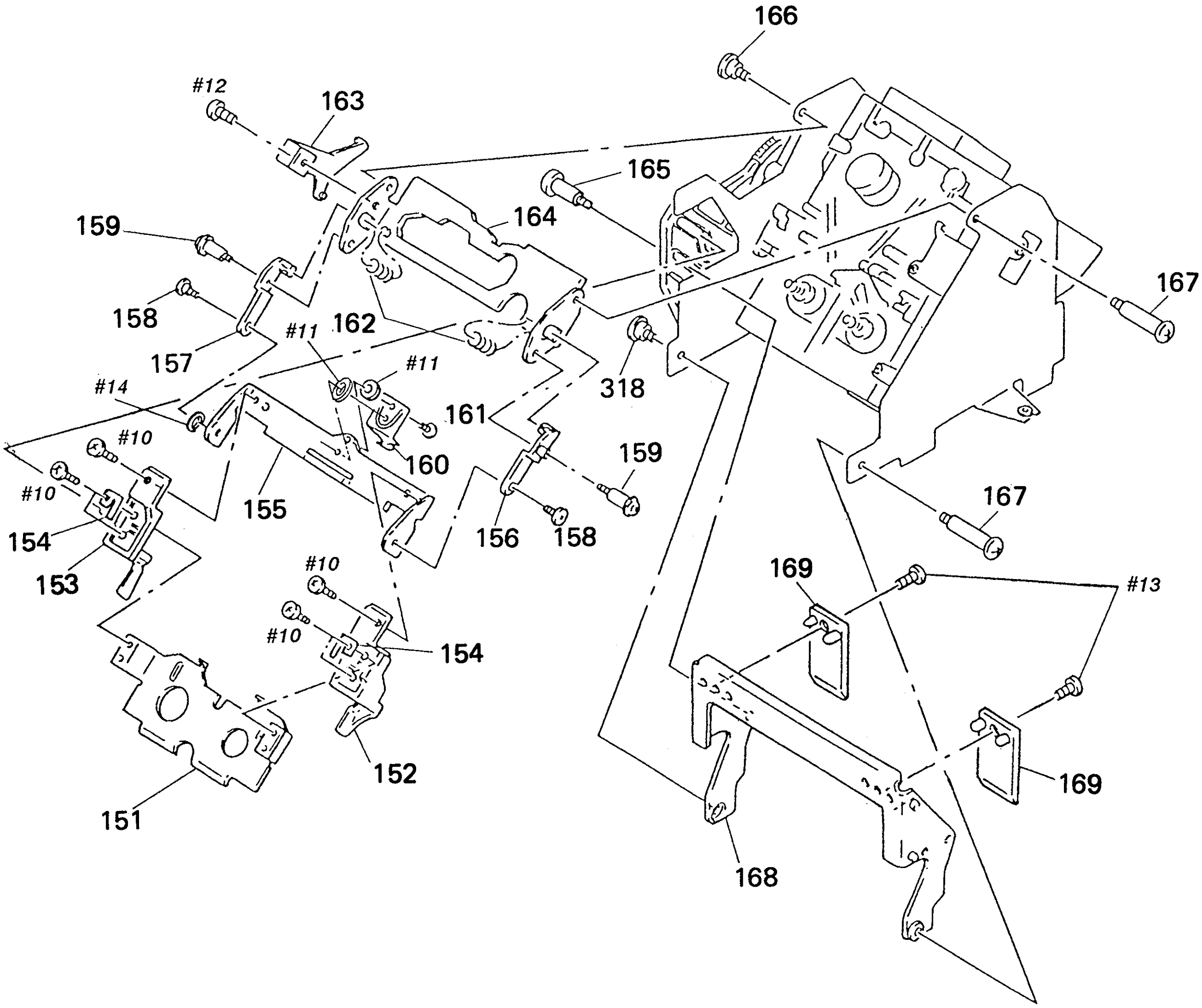
5-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
101	3-575-524-00	COVER, POWER SWITCH	
102	* A-2006-537-A	AUDIO BOARD, COMPLETE	
103	3-704-242-01	SCREW, TERMINAL, +BVTP CLAW	
104	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
105	4-931-466-01	SPACER	
106	9-911-839-XX	CUSHION	
107	* 1-637-613-11	HP VOL BOARD	
108	* 1-637-614-11	HP JACK BOARD	
109	* 3-363-575-31	SUPPORT	
110	* 1-637-615-11	REC VOL BOARD	
111	⚠1-559-479-11	CORD, POWER (US)	
	⚠1-575-912-11	CORD, POWER (AEP)	
	⚠1-575-913-11	CORD, POWER (UK)	
112	* 4-923-873-01	BRACKET, CORD STOPPER	
113	⚠3-703-244-00	BUSHING (2104), CORD (AEP, UK)	
	⚠4-916-783-01	BUSHING, CORD (US)	
114	4-860-518-00	PAPER, VIBRATION PROOF (E)	
115	* A-2006-344-A	POWER BOARD, COMPLETE	
116	* 1-637-625-11	DIODE BOARD	
117	* 3-364-938-11	PANEL, BACK (87ES)	
	* 3-364-938-31	PANEL, BACK (77ES: UK)	
	* 3-364-938-41	PANEL, BACK (77ES: AEP)	
118	* 1-637-626-11	BATTERY BOARD	
119	* A-2006-587-A	DIGITAL BOARD, COMPLETE	
120	* 4-931-401-01	HEAT SINK, V.OUT	
121	* 1-637-621-11	LINE FILTER BOARD	
122	* 3-329-937-02	CLIP, WIRE	
123	* 1-637-617-11	DIGITAL OUT BOARD	
124	* 1-637-618-11	D-I/O OPT BOARD	
125	3-703-150-11	STOPPER, WIRING	
126	* 1-637-616-11	COA IN BOARD	
127	3-703-685-21	SCREW (+BV 3X8)	
128	* 1-637-620-11	LINE IN BOARD	
129	* 1-637-622-11	TR-A BOARD	
130	* 1-637-623-11	TR-B BOARD	
131	* 1-637-624-11	TR-C BOARD	
132	9-911-843-XX	CUSHION, FLYWHEEL	
133	1-543-843-11	FERRITE BOARD, MULTI HOLE	
134	3-701-947-16	LABEL (T3.15A) FUSE (AEP, UK)	
135	* 3-701-947-14	LABEL(T2A), FUSE (AEP, UK)	
BATT01	⚠1-528-229-11	BATTERY, LITHIUM (CR-2450)	
FH901	⚠1-532-745-11	FUSE, GLASS TUBE (3.15A 125V) (US)	
	⚠1-532-237-00	FUSE, TIME-LAG (T3.15A 250V) (AEP, UK)	
FH902	⚠1-532-203-00	FUSE, TIME-LAG (T2A 250V) (AEP, UK)	
	⚠1-532-743-11	FUSE, GLASS TUBE (2A, 125V) (US)	
FH903	⚠1-532-203-00	FUSE, TIME-LAG (T2A 125V) (AEP, UK)	
	⚠1-532-743-11	FUSE, GLASS TUBE (2A, 250V) (US)	
FH941	⚠1-532-743-11	FUSE, GLASS TUBE (2A, 125V) (US)	
	⚠1-532-203-00	FUSE, TIME-LAG (T2A 250V) (AEP, UK)	
PT901	⚠1-450-450-11	TRANSFORMER, POWER (D) (US)	
	⚠1-450-603-11	TRANSFORMER, POWER (AEP, UK)	
PT902	⚠1-450-449-11	TRANSFORMER, POWER (A) (US)	
	⚠1-450-604-11	TRANSFORMER, POWER (A) (AEP, UK)	
S901	⚠1-554-920-11	SWITCH, PUSH (AC POWER) (1 KEY)	

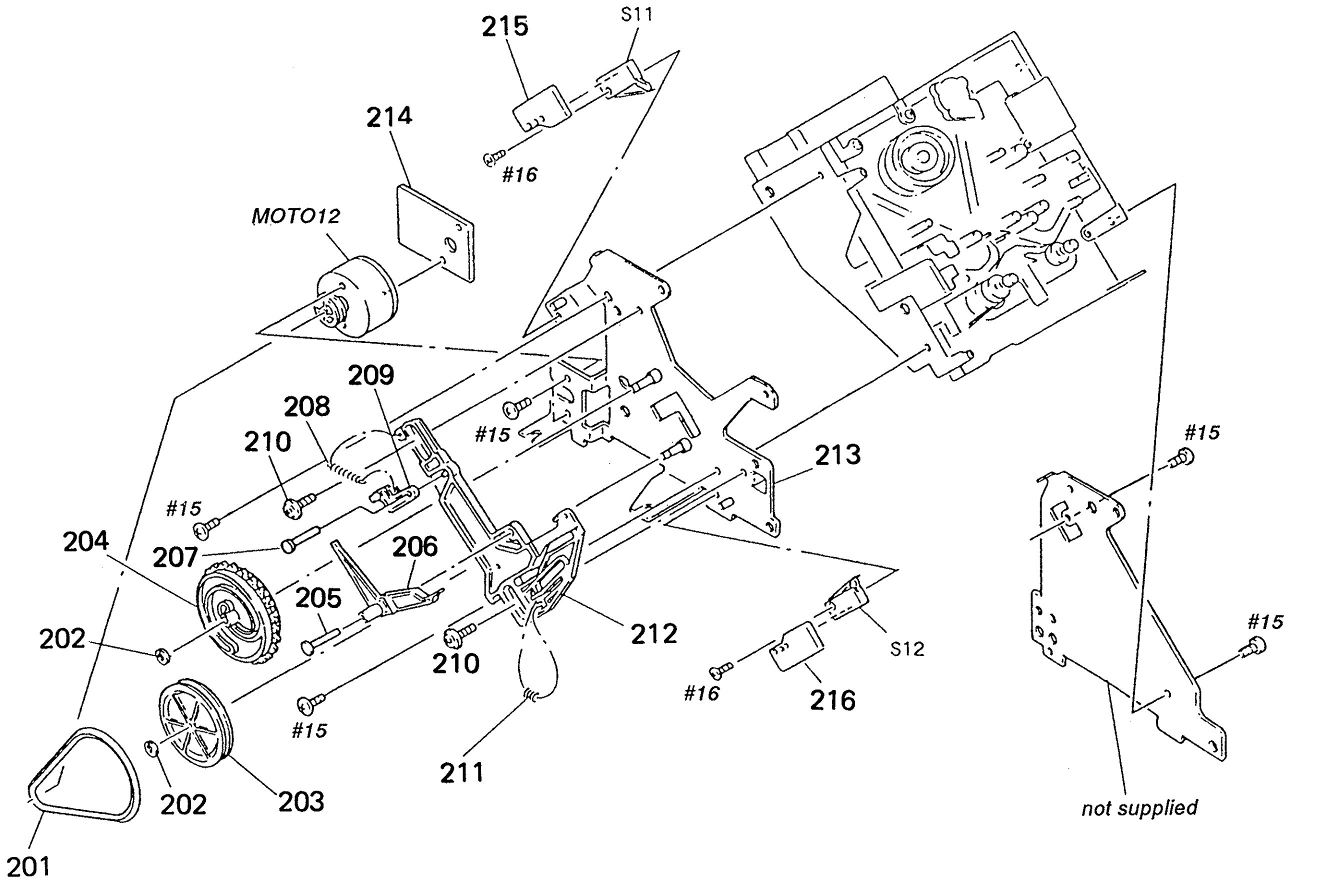
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-4. MECHANISM SECTION 1



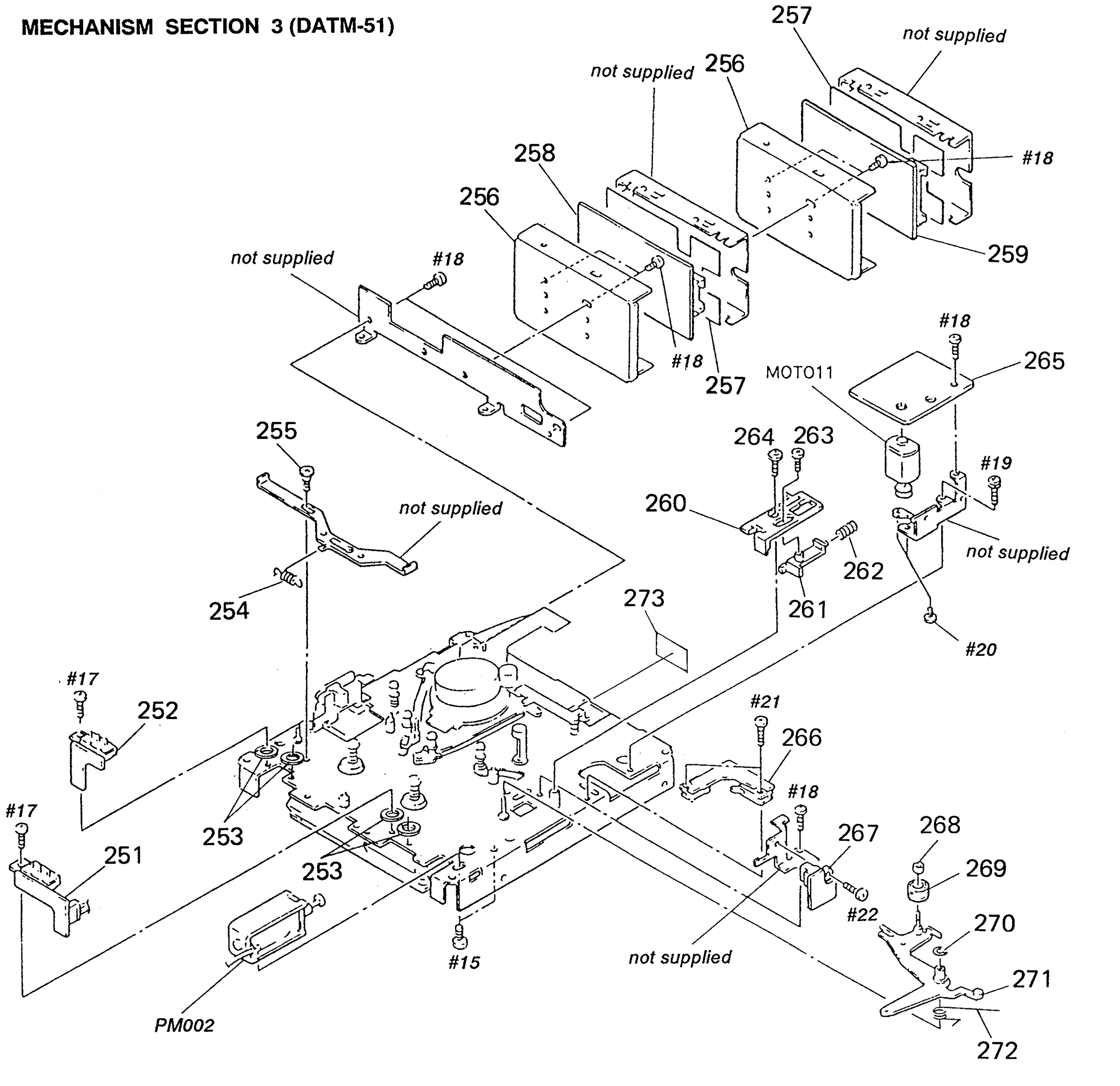
Ref. No.		Part No.	Description	Remark
151		4-931-476-01	HOLDER (LOWER)	
152		4-931-486-01	HOLDER (C-RIGHT)	
153		4-931-484-01	HOLDER (C-LEFT)	
154		3-366-308-01	SPRING (SIDE), PLATE	
155	*	4-931-485-01	HOLDER (C-INNER)	
156		4-931-481-01	ARM (LIMITER L)	
157		4-931-473-01	ARM (LIMITER R)	
158		3-312-161-00	SCREW, STEP, PRECISION	
159		4-918-991-01	SCREW, STEP	
160		4-931-461-01	SPRING (CENTER), LEAF	
161		3-352-517-01	SCREW (M2X2.5)	
162		3-537-214-00	SPRING, COMPRESSION	
163	*	X-3362-941-1	JOINT ASSY	
164		3-369-235-01	PLATE, FULCRUM	
165		4-931-471-01	SCREW (STEP)	
166		2-236-956-00	SCREW, STEP	
167		4-931-463-01	SCREW (STEP)	
168		4-931-474-01	HOLDER (WINDOW)	
169		4-931-469-01	PLATE, ORNAMENTAL	

5-5. MECHANISM SECTION 2



Ref. No.	Part No.	Description	Remark
201	4-931-470-01	BELT (DRIVING)	
202	3-307-948-21	WASHER, NYLON	
203	4-931-459-01	PULLEY	
204	4-931-477-01	GEAR (CAM)	
205	4-931-468-01	SHAFT (PRESS FITTING)	
206	4-931-490-01	LEVER (LINK)	
207	4-936-626-01	SHAFT (ARM PRESS FITTING)	
208	3-549-810-00	SPRING, TENSION	
209	4-931-460-01	ARM (SLIDER)	
210	4-932-336-01	SCREW (STEP)	
211	3-537-215-00	SPRING, COMPRESSION	
212	4-931-492-01	SLIDER (CAM)	
213	* X-4919-023-4	PLATE ASSY, SIDE	
214	* 1-633-726-11	PC BOARD, MOTOR	
215	* 1-633-727-11	PC BOAED, SW(IN)	
216	* 1-633-728-11	PC BOARD, SW(OUT)	
MOTO12	A-2003-448-A	MOTOR ASSY (CASSETTE COMPARTMENT)	

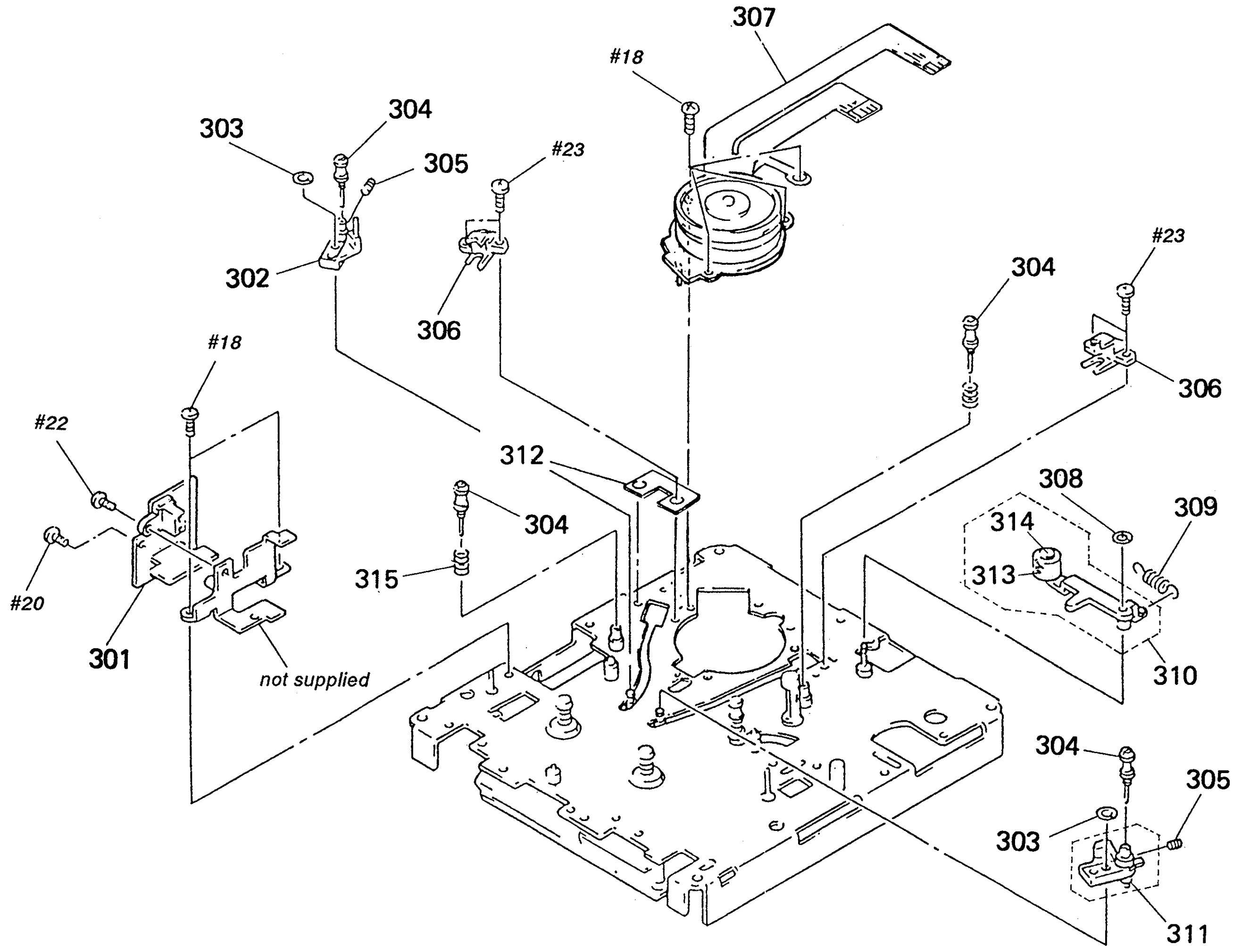
5-6. MECHANISM SECTION 3 (DATM-51)



Ref. No.	Part No.	Description	Remark
251	* 1-637-605-11	T-SW BOARD	
252	* 1-637-604-11	S-SW BOARD	
253	3-344-781-01	WASHER, POLYETHYLENE	
254	3-307-375-00	SPRING, TENSION	
255	3-312-161-00	SCREW, STEP, PRECISION	
256	* 3-337-686-11	CASE (LOWER), SHIELD	
257	* 3-362-537-01	SHEET (RF)	
258	* A-2006-207-A	AMPLIFIER BOARD, COMPLETE	
259	* A-2006-206-A	AMPLIFIER BOARD, COMPLETE	
260	3-362-148-01	SLIDER (PINCH)	
261	3-362-149-01	SLIDER (LIMITTER)	
262	3-564-035-00	SPRING, COMPRESSION	
263	2-623-756-01	SCREW, (B1.7X3), TAPPING	

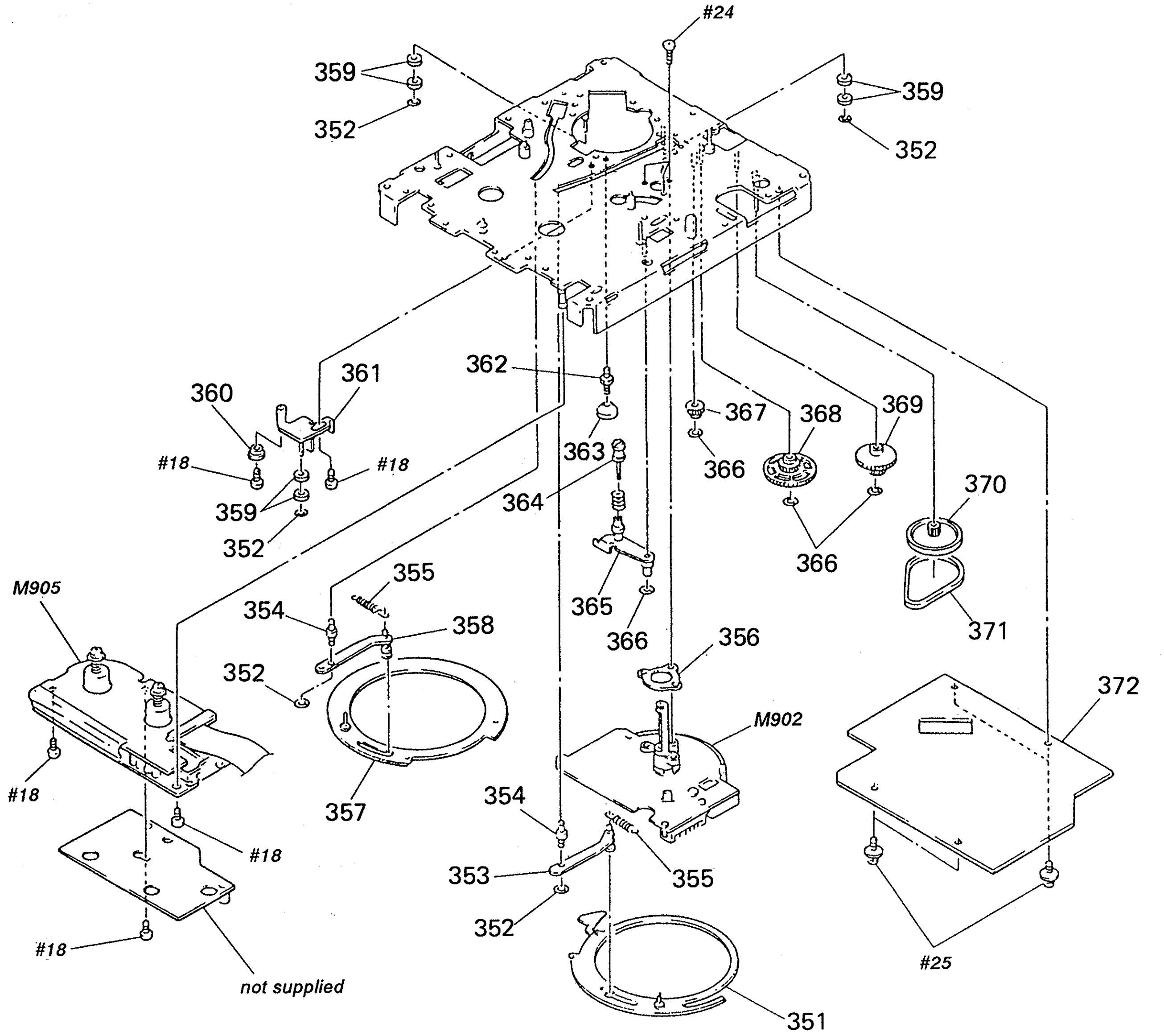
Ref. No.	Part No.	Description	Remark
264	3-703-502-11	SCREW	
265	* 1-637-601-11	LOADING MOTOR BOARD	
266	* 1-637-606-11	LOAD-SW BOARD	
267	* 1-637-603-11	T-END BOARD	
268	3-337-626-01	CAP, PINCH ROLLER	
269	X-3337-610-1	PINCH ROLLER ASSY	
270	3-701-436-11	WASHER, STOPPER	
271	X-3362-021-1	LEVER (PINCH ROLLER) ASSY	
272	3-367-352-01	SPRING (PINCH)	
273	3-366-886-01	SHEET (RF BRACKET)	
MOT011	A-2003-660-A	MOTOR ASSY (LOADING)	
PM002	1-454-522-11	SOLENOID, PLUNGER	

5-7. MECHANISM SECTION 4 (DATM-51)



Ref. No.	Part No.	Description	Remark
301	* 1-637-602-11	S-END BOARD	
302	X-3362-028-1	SLANT BLOCK (L2) ASSY	
303	3-325-698-01	RING, RETAINING	
304	X-3362-027-1	GUIDE ASSY, ROLLER	
305	3-362-152-01	SCREW (RETURN GUIDE BOSS)	
306	* 3-337-685-01	CATCHER	
307	8-848-549-11	DRUM ASSY DOU-15A-R	
308	3-701-436-11	WASHER, STOPPER	
309	3-307-375-00	SPRING, TENSION	
310	A-2003-487-A	ARM (CLEANING) ASSY	
311	X-3362-029-1	SLANT BLOCK (R2) ASSY	
312	3-701-437-01	SHEET (CATCHER)	
313	3-352-518-01	ROLLER (CLEANER)	
314	3-353-812-01	COLLAR (ROLLER)	
315	3-573-470-00	SPRING, COMPRESSION	

5-8. MECHANISM SECTION 5 (DATM-51)



Ref. No.	Part No.	Description	Remark
351	X-3362-204-1	GEAR (LOAD) ASSY	
352	3-559-408-11	WASHER, POLYETHYLENE, DIA. 1.2	
353	* X-3362-025-1	LEVER (LOADING R) ASSY	
354	3-362-151-01	BOSS (GUIDE)	
355	3-337-653-01	SPRING, TENSION	
356	* 3-362-156-01	BRACKET (CAPSTAN)	
357	X-3337-602-1	RING (LEFT) ASSY, LOADING	
358	* X-3362-024-1	LEVER (LOADING L) ASSY	
359	3-337-622-01	ROLLER, RING	
360	* 3-362-158-01	COLLAR (RING ADJUSTMENT)	
361	* X-3362-023-1	ARM (RING ROLLER) ASSY	
362	* 3-362-159-01	SHAFT (RING ADJUSTMENT)	
363	3-362-160-01	NUT (RING ADJUSTMENT)	
364	X-3362-027-1	GUIDE ASSY, ROLLER	
365	* X-3362-020-1	LEVER (F GUIDE) ASSY	
366	3-701-436-11	WASHER, STOPPER	
367	3-345-182-01	GEAR (LOADING B)	
368	3-345-181-01	GEAR (LOADING A)	
369	3-362-155-01	GEAR (A)	
370	4-932-338-01	PULLEY (A)	
371	4-913-325-01	BELT, TAKE-UP	
372	* A-2006-382-A	MD BOARD, COMPLETE	
M902	8-835-306-01	MOTOR, DC U-17A	
M905	* 8-835-205-01	MOTOR, DC U-2A	

RF AMP (REC/PB)

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description				Remark
	* A-2006-206-A	RF AMP (REC/PB) BOARD, COMPLETE				
		******************************				
		⟨ CAPACITOR ⟩				
C951	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C953	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C954	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C955	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C956	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C957	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C958	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C959	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C960	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C961	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C962	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C963	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C965	1-164-298-11	CERAMIC CHIP	0.15uF	10%	25V	
C966	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C967	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C968	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C969	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C971	1-164-298-11	CERAMIC CHIP	0.15uF	10%	25V	
C973	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C974	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C975	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C976	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C977	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V	
C978	1-162-638-11	CERAMIC CHIP	1uF		16V	
C979	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V	
C980	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C981	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C982	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C983	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C984	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C985	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
		⟨ CONNECTOR ⟩				
CN951	1-569-349-11	CONNECTOR, F.P.C 6P				
CN952	* 1-564-728-11	PIN, CONNECTOR (SMALL TYPE)12P				
		⟨ IC ⟩				
IC951	8-752-032-26	IC CXA1045Q-Z				
		⟨ COIL ⟩				
L951	1-408-777-00	INDUCTOR CHIP	10uH			
L952	1-408-791-00	INDUCTOR CHIP	150uH			
L953	1-408-791-00	INDUCTOR CHIP	150uH			
		⟨ RESISTOR ⟩				
R951	1-216-056-00	METAL GLAZE	2K	5%	1/10W	
R952	1-216-056-00	METAL GLAZE	2K	5%	1/10W	
R953	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R954	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R955	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R956	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R957	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R958	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R959	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R960	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R961	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R962	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R963	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R964	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R965	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R966	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R967	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R968	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R969	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R970	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R971	1-216-748-11	METAL CHIP	39K	5%	1/10W	
R972	1-216-295-00	METAL CHIP	0	5%	1/10W	
R973	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R974	1-216-073-00	METAL CHIP	10K	5%	1/10W	

Ref. No.	Part No.	Description	Remark

(VARIABLE RESISTOR)

RV951	1-238-237-11	RES, ADJ, CERMET 470			
RV952	1-238-237-11	RES, ADJ, CERMET 470			

****

* A-2006-207-A RF AMP (PB) BOARD, COMPLETE
****

(CAPACITOR)

C51	1-124-779-00	ELECT CHIP	10uF	20%	16V
C52	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C53	1-162-638-11	CERAMIC CHIP	1uF		16V
C54	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V
C55	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C57	1-124-779-00	ELECT CHIP	10uF	20%	16V
C58	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C59	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V
C60	1-162-638-11	CERAMIC CHIP	1uF		16V
C61	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C62	1-124-779-00	ELECT CHIP	10uF	20%	16V
C63	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C64	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C66	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C69	1-124-779-00	ELECT CHIP	10uF	20%	16V
C70	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C71	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C72	1-163-038-00	CERAMIC CHIP	0.1uF		25V

(CONNECTOR)

CN51	1-569-349-11	CONNECTOR, F.P.C 6P
CN52	* 1-564-725-11	PIN, CONNECTOR (SMALL TYPE) 9P

(IC)

IC51	8-752-039-01	IC CXA1364R

(COIL)

L51	1-408-781-00	INDUCTOR, CHIP 22uH
L52	1-408-789-21	INDUCTOR, CHIP 100uH
L53	1-408-781-00	INDUCTOR, CHIP 22uH

(TRANSISTOR)

Q51	8-729-901-01	TRANSISTOR DTC144EK
Q52	8-729-901-01	TRANSISTOR DTC144EK
Q53	8-729-901-01	TRANSISTOR DTC144EK
Q54	8-729-901-01	TRANSISTOR DTC144EK
Q55	8-729-901-01	TRANSISTOR DTC144EK

Ref. No.	Part No.	Description	Remark

(RESISTOR)

R51	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R52	1-216-077-00	METAL CHIP	15K	5%	1/10W
R53	1-216-077-00	METAL CHIP	15K	5%	1/10W
R54	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R55	1-216-083-00	METAL CHIP	27K	5%	1/10W
R56	1-216-089-00	METAL CHIP	47K	5%	1/10W
R57	1-216-084-00	METAL GLAZE	30K	5%	1/10W
R58	1-216-085-00	METAL CHIP	33K	5%	1/10W
R59	1-216-085-00	METAL CHIP	33K	5%	1/10W
R60	1-216-748-11	METAL CHIP	39K	5%	1/10W
R61	1-216-075-00	METAL CHIP	12K	5%	1/10W
R62	1-216-077-00	METAL CHIP	15K	5%	1/10W
R63	1-216-065-00	METAL CHIP	4.7K	5%	1/10W

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* A-2006-537-A AUDIO BOARD, COMPLETE
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	1-568-129-11	BAR, BUS 8P
*	1-568-130-11	BAR, BUS 3P
	7-682-147-15	SCREW, TR
*	3-346-266-12	PLATE, GROUND
*	4-931-401-01	HEAT SINK, V.OUT

(CAPACITOR)

C101	1-124-915-11	ELECT	10uF	20%	63V
C102	1-136-153-00	FILM	0.01uF	5%	50V
C103	1-136-153-00	FILM	0.01uF	5%	50V
C167	1-136-811-11	FILM	330PF	5%	100V
C168	1-136-811-11	FILM	330PF	5%	100V
C169	1-136-810-11	FILM	220PF	5%	100V
C170	1-136-810-11	FILM	220PF	5%	100V
C171	1-136-234-11	FILM	0.0062uF	3%	100V
C172	1-136-808-11	FILM	100PF	5%	100V
C173	1-136-234-11	FILM	0.0062uF	3%	100V
C174	1-136-808-11	FILM	100PF	5%	100V
C175	1-136-228-11	FILM	0.0012uF	3%	100V
C176	1-136-233-11	FILM	0.0047uF	3%	100V
C177	1-124-918-11	ELECT	47uF	20%	63V
C178	1-109-621-00	MICA	220PF		500V
C201	1-124-915-11	ELECT	10uF	20%	63V
C202	1-136-153-00	FILM	0.01uF	5%	50V
C203	1-136-153-00	FILM	0.01uF	5%	50V
C267	1-136-811-11	FILM	330PF	5%	100V
C268	1-136-811-11	FILM	330PF	5%	100V
C269	1-136-810-11	FILM	220PF	5%	100V
C270	1-136-810-11	FILM	220PF	5%	100V
C271	1-136-234-11	FILM	0.0062uF	3%	100V
C272	1-136-808-11	FILM	100PF	5%	100V
C273	1-136-234-11	FILM	0.0062uF	3%	100V

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Ref. No.	Part No.	Description				Remark
C274	1-136-808-11	FILM	100PF	5%	100V	
C275	1-136-228-11	FILM	0.0012uF	3%	100V	
C276	1-136-233-11	FILM	0.0047uF	3%	100V	
C277	1-124-918-11	ELECT	47uF	20%	63V	
C278	1-109-621-00	MICA	220PF	1%	500V	
C301	1-124-915-11	ELECT	10uF	20%	63V	
C302	1-136-165-00	FILM	0.1uF	5%	50V	
C303	1-136-165-00	FILM	0.1uF	5%	50V	
C304	1-136-165-00	FILM	0.1uF	5%	50V	
C305	1-136-165-00	FILM	0.1uF	5%	50V	
C306	1-124-484-11	ELECT	220uF	20%	35V	
C307	1-124-484-11	ELECT	220uF	20%	35V	
C310	1-124-713-11	ELECT	470uF	20%	35V	
C311	1-136-165-00	FILM	0.1uF	5%	50V	
C312	1-124-713-11	ELECT	470uF	20%	35V	
C313	1-136-165-00	FILM	0.1uF	5%	50V	
C314	1-124-484-11	ELECT	220uF	20%	35V	
C315	1-136-165-00	FILM	0.1uF	5%	50V	
C316	1-136-165-00	FILM	0.1uF	5%	50V	
C317	1-124-918-11	ELECT	47uF	20%	63V	
C318	1-136-165-00	FILM	0.1uF	5%	50V	
C319	1-136-165-00	FILM	0.1uF	5%	50V	
C320	1-136-165-00	FILM	0.1uF	5%	50V	
C325	1-124-517-11	ELECT	470uF	20%	50V	
C326	1-124-517-11	ELECT	470uF	20%	50V	
C327	1-124-130-00	ELECT	100uF	20%	63V	
C328	1-124-130-00	ELECT	100uF	20%	63V	
C329	1-107-210-00	MICA	22PF	5%	500V	
C330	1-107-210-00	MICA	22PF	5%	500V	
C331	1-124-922-11	ELECT	1000uF	20%	63V	
C332	1-124-922-11	ELECT	1000uF	20%	63V	
C333	1-124-484-11	ELECT	220uF	20%	35V	
C334	1-136-165-00	FILM	0.1uF	5%	50V	
C337	1-124-122-11	ELECT	100uF	20%	50V	
C338	1-136-165-00	FILM	0.1uF	5%	50V	
C339	1-136-165-00	FILM	0.1uF	5%	50V	
C340	1-136-165-00	FILM	0.1uF	5%	50V	
C341	1-124-122-11	ELECT	100uF	20%	50V	
C342	1-136-165-00	FILM	0.1uF	5%	50V	
C343	1-136-165-00	FILM	0.1uF	5%	50V	
C344	1-124-122-11	ELECT	100uF	20%	50V	
C345	1-136-165-00	FILM	0.1uF	5%	50V	
C346	1-124-122-11	ELECT	100uF	20%	50V	
C347	1-136-165-00	FILM	0.1uF	5%	50V	
C348	1-124-122-11	ELECT	100uF	20%	50V	
C349	1-136-165-00	FILM	0.1uF	5%	50V	
C350	1-124-122-11	ELECT	100uF	20%	50V	
C351	1-136-165-00	FILM	0.1uF	5%	50V	
C352	1-136-165-00	FILM	0.1uF	5%	50V	
C353	1-136-165-00	FILM	0.1uF	5%	50V	

Ref. No.	Part No.	Description				Remark
C354	1-124-122-11	ELECT	100uF	20%	50V	
C355	1-136-165-00	FILM	0.1uF	5%	50V	
C356	1-136-165-00	FILM	0.1uF	5%	50V	
C357	1-124-122-11	ELECT	100uF	20%	50V	
C358	1-136-165-00	FILM	0.1uF	5%	50V	
C359	1-124-122-11	ELECT	100uF	20%	50V	
C360	1-136-165-00	FILM	0.1uF	5%	50V	
C361	1-124-122-11	ELECT	100uF	20%	50V	
C362	1-136-165-00	FILM	0.1uF	5%	50V	
C363	1-136-153-00	FILM	0.01uF	5%	50V	
C364	1-162-284-31	CERAMIC	150PF	10%	50V	
C365	1-162-199-31	CERAMIC	10PF	5%	50V	
C366	1-124-122-11	ELECT	100uF	20%	50V	
C367	1-162-211-31	CERAMIC	33PF	5%	50V	
C368	1-162-199-31	CERAMIC	10PF	5%	50V	
C370	1-136-157-00	FILM	0.022uF	5%	50V	
C371	1-136-165-00	FILM	0.1uF	5%	50V	
C372	1-136-165-00	FILM	0.1uF	5%	50V	
C373	1-136-157-00	FILM	0.022uF	5%	50V	
C374	1-136-177-00	FILM	1uF	5%	50V	
C375	1-136-165-00	FILM	0.1uF	5%	50V	
C376	1-124-484-11	ELECT	220uF	20%	35V	
C377	1-124-484-11	ELECT	220uF	20%	35V	
C378	1-124-713-11	ELECT	470uF	20%	35V	
C379	1-124-713-11	ELECT	470uF	20%	35V	
C380	1-124-915-11	ELECT	10uF	20%	63V	
C381	1-124-713-11	ELECT	470uF	20%	35V	
C382	1-136-165-00	FILM	0.1uF	5%	50V	
C383	1-136-165-00	FILM	0.1uF	5%	50V	
C384	1-136-165-00	FILM	0.1uF	5%	50V	
C385	1-136-165-00	FILM	0.1uF	5%	50V	
C386	1-124-484-11	ELECT	220uF	20%	35V	
C387	1-124-484-11	ELECT	220uF	20%	35V	
C389	1-124-122-11	ELECT	100uF	20%	50V	
C390	1-136-157-00	FILM	0.022uF	5%	50V	
C391	1-136-177-00	FILM	1uF	5%	50V	
C392	1-136-165-00	FILM	0.1uF	5%	50V	
C393	1-136-165-00	FILM	0.1uF	5%	50V	
C394	1-136-165-00	FILM	0.1uF	5%	50V	
C395	1-162-179-11	CERAMIC	0.1uF		50V	

〈 CONNECTOR 〉

Ref. No.	Part No.	Description	Remark
CN96	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN101	* 1-564-505-11	PLUG, CONNECTOR 2P	
CN102	* 1-564-505-11	PLUG, CONNECTOR 2P	
CN103	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN104	* 1-564-505-11	PLUG, CONNECTOR 2P	
CN201	* 1-564-505-11	PLUG, CONNECTOR 2P	
CN202	* 1-564-505-11	PLUG, CONNECTOR 2P	
CN203	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN204	* 1-564-505-11	PLUG, CONNECTOR 2P	

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Ref. No.	Part No.	Description	Remark
CN351	* 1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P	
CN352	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
		〈 DIODE 〉	
D101	8-719-107-94	DIODE 1SS202-1	
D102	8-719-107-94	DIODE 1SS202-1	
D201	8-719-107-94	DIODE 1SS202-1	
D202	8-719-107-94	DIODE 1SS202-1	
D325	8-719-902-87	DIODE EQB01-08Q	
D326	8-719-902-87	DIODE EQB01-08Q	
D349	8-719-200-77	DIODE 10E2N	
D350	8-719-114-30	DIODE RD5.1JSB2	
D351	8-719-901-59	DIODE KV1320	
D352	8-719-903-27	DIODE 1SS168	
D353	8-719-107-94	DIODE 1SS202-1	
D354	8-719-107-94	DIODE 1SS202-1	
D355	8-719-107-94	DIODE 1SS202-1	
D356	8-719-107-94	DIODE 1SS202-1	
D357	8-719-200-82	DIODE 11ES2	
D358	8-719-200-82	DIODE 11ES2	
D359	8-719-107-94	DIODE 1SS202-1	
		〈 IC 〉	
IC101	8-759-602-83	IC M5238P	
IC102	8-759-504-50	IC LF412CN/SL161841	
IC151	8-759-900-72	IC NE5532P	
IC152	8-759-900-72	IC NE5532P	
IC153	8-759-981-98	IC RC4560DD	
IC201	8-759-602-83	IC M5238P	
IC202	8-759-504-50	IC LF412CN/SL161841	
IC251	8-759-900-72	IC NE5532P	
IC252	8-759-900-72	IC NE5532P	
IC253	8-759-981-98	IC RC4560DD	
IC301	8-759-231-53	IC TA7805S	
IC302	8-759-604-47	IC M5F7905L	
IC303	8-759-231-53	IC TA7805S	
IC304	8-759-999-09	IC CS5326-KP	
IC305	8-759-916-55	IC SN74HC175AN	
IC348	8-752-335-51	IC CXD2552Q-1	
IC349	8-752-335-51	IC CXD2552Q-1	
IC350	8-759-999-32	IC SM5813APT	
IC351	8-759-917-18	IC SN74HCU04AN	
IC354	8-759-900-72	IC NE5532P	
IC355	8-759-634-55	IC M5F7805L-720	
IC356	8-759-604-30	IC M5F7808L	
IC357	8-759-917-11	IC SN74HC393AN	
IC358	8-759-250-81	IC TC5081AP	
IC359	8-759-233-64	IC TC74HCU04AF	
IC360	8-759-239-47	IC TC74HC123AP	
IC361	8-759-916-29	IC SN74HC74N	

Ref. No.	Part No.	Description	Remark
		〈 COIL 〉	
L351	1-410-324-11	INDUCTOR 4.7uH	
L352	1-460-042-11	COIL (WITH CORE)	
L353	1-460-042-11	COIL (WITH CORE)	
L355	1-410-324-11	INDUCTOR 4.7uH	
		〈 TRANSISTOR 〉	
Q325	8-729-204-90	TRANSISTOR 2SK246-GR1	
Q326	8-729-204-90	TRANSISTOR 2SK246-GR1	
Q327	8-729-803-82	TRANSISTOR 2SC3468-E	
Q328	8-729-803-76	TRANSISTOR 2SA1371-E	
Q329	8-729-127-53	TRANSISTOR 2SC2275-P	
Q330	8-729-190-53	TRANSISTOR 2SA985A-P	
Q331	8-729-803-76	TRANSISTOR 2SA1371-E	
Q332	8-729-803-82	TRANSISTOR 2SC3468-E	
Q333	8-729-803-82	TRANSISTOR 2SC3468-E	
Q334	8-729-803-76	TRANSISTOR 2SA1371-E	
Q350	8-729-127-53	TRANSISTOR 2SC2275-P	
Q351	8-729-900-61	TRANSISTOR DTA114ES	
Q352	8-729-200-56	TRANSISTOR 2SK241-GR	
Q353	8-729-200-56	TRANSISTOR 2SK241-GR	
Q354	8-729-900-61	TRANSISTOR DTA114ES	
Q355	8-729-900-80	TRANSISTOR DTC114ES	
Q356	8-729-900-61	TRANSISTOR DTA114ES	
Q357	8-729-900-80	TRANSISTOR DTC114ES	
Q358	8-729-900-80	TRANSISTOR DTC114ES	
Q359	8-729-900-61	TRANSISTOR DTA114ES	
		〈 RESISTOR 〉	
R103	1-246-545-00	CARBON 1.0M 5% 1/4W	
R104	1-247-717-11	CARBON 2.2K 5% 1/4W	
R105	1-249-462-11	CARBON 22K 5% 1/4W	
R106	1-249-469-11	CARBON 100K 5% 1/4W	
R107	1-249-520-11	CARBON 47 5% 1/4W	
R108	1-249-512-11	CARBON 22 5% 1/4W	
R109	1-249-524-11	CARBON 68 5% 1/4W	
R150	1-249-946-11	CARBON 9.1K 1% 1/4W	
R151	1-249-946-11	CARBON 9.1K 1% 1/4W	
R152	1-249-946-11	CARBON 9.1K 1% 1/4W	
R153	1-249-946-11	CARBON 9.1K 1% 1/4W	
R154	1-247-721-11	CARBON 4.7K 5% 1/4W	
R155	1-247-721-11	CARBON 4.7K 5% 1/4W	
R156	1-247-721-11	CARBON 4.7K 5% 1/4W	
R157	1-247-721-11	CARBON 4.7K 5% 1/4W	
R158	1-249-948-11	CARBON 11K 1% 1/4W	
R159	1-249-948-11	CARBON 11K 1% 1/4W	
R160	1-249-941-11	CARBON 5.6K 1% 1/4W	
R161	1-249-932-11	CARBON 2.4K 1% 1/4W	
R162	1-246-545-00	CARBON 1.0M 5% 1/4W	

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Ref. No.	Part No.	Description				Remark
R163	1-249-941-11	CARBON	5.6K	1%	1/4W	
R164	1-249-941-11	CARBON	5.6K	1%	1/4W	
R165	1-249-941-11	CARBON	5.6K	1%	1/4W	
R166	1-249-932-11	CARBON	2.4K	1%	1/4W	
R167	1-246-545-00	CARBON	1.0M	5%	1/4W	
R168	1-249-556-11	CARBON	1.5K	5%	1/4W	
R169	1-249-556-11	CARBON	1.5K	5%	1/4W	
R170	1-249-469-11	CARBON	100K	5%	1/4W	
R171	1-249-529-11	CARBON	110	5%	1/4W	
R172	1-249-529-11	CARBON	110	5%	1/4W	
R173	1-247-721-11	CARBON	4.7K	5%	1/4W	
R174	1-249-462-11	CARBON	22K	5%	1/4W	
R175	1-247-700-11	CARBON	100	5%	1/4W	
R177	1-249-497-11	CARBON	33K	5%	1/4W	
R203	1-246-545-00	CARBON	1.0M	5%	1/4W	
R204	1-247-717-11	CARBON	2.2K	5%	1/4W	
R205	1-249-462-11	CARBON	22K	5%	1/4W	
R206	1-249-469-11	CARBON	100K	5%	1/4W	
R207	1-249-520-11	CARBON	47	5%	1/4W	
R208	1-249-512-11	CARBON	22	5%	1/4W	
R209	1-249-524-11	CARBON	68	5%	1/4W	
R250	1-249-946-11	CARBON	9.1K	1%	1/4W	
R251	1-249-946-11	CARBON	9.1K	1%	1/4W	
R252	1-249-946-11	CARBON	9.1K	1%	1/4W	
R253	1-249-946-11	CARBON	9.1K	1%	1/4W	
R254	1-247-721-11	CARBON	4.7K	5%	1/4W	
R255	1-247-721-11	CARBON	4.7K	5%	1/4W	
R256	1-247-721-11	CARBON	4.7K	5%	1/4W	
R257	1-247-721-11	CARBON	4.7K	5%	1/4W	
R258	1-249-948-11	CARBON	11K	1%	1/4W	
R259	1-249-948-11	CARBON	11K	1%	1/4W	
R260	1-249-941-11	CARBON	5.6K	1%	1/4W	
R261	1-249-932-11	CARBON	2.4K	1%	1/4W	
R262	1-246-545-00	CARBON	1.0M	5%	1/4W	
R263	1-249-941-11	CARBON	5.6K	1%	1/4W	
R264	1-249-941-11	CARBON	5.6K	1%	1/4W	
R265	1-249-941-11	CARBON	5.6K	1%	1/4W	
R266	1-249-932-11	CARBON	2.4K	1%	1/4W	
R267	1-246-545-00	CARBON	1.0M	5%	1/4W	
R268	1-249-556-11	CARBON	1.5K	5%	1/4W	
R269	1-249-556-11	CARBON	1.5K	5%	1/4W	
R270	1-249-469-11	CARBON	100K	5%	1/4W	
R271	1-249-529-11	CARBON	110	5%	1/4W	
R272	1-249-529-11	CARBON	110	5%	1/4W	
R273	1-247-721-11	CARBON	4.7K	5%	1/4W	
R274	1-249-462-11	CARBON	22K	5%	1/4W	
R275	1-247-700-11	CARBON	100	5%	1/4W	
R277	1-249-497-11	CARBON	33K	5%	1/4W	
R301	1-249-460-11	CARBON	15K	5%	1/4W	
R302	1-247-704-11	CARBON	220	5%	1/4W	
R303	1-249-504-11	CARBON	10	5%	1/4W	
R325	1-247-706-11	CARBON	330	5%	1/4W	
R326	1-247-706-11	CARBON	330	5%	1/4W	
R327	1-247-710-11	CARBON	560	5%	1/4W	
R328	1-247-710-11	CARBON	560	5%	1/4W	
R329	1-249-466-11	CARBON	56K	5%	1/4W	
R330	1-249-466-11	CARBON	56K	5%	1/4W	
R331	1-247-719-11	CARBON	3.3K	5%	1/4W	
R332	1-247-719-11	CARBON	3.3K	5%	1/4W	
R333	1-249-798-11	CARBON	680	5%	1/2W	
R334	1-249-798-11	CARBON	680	5%	1/2W	
R335	1-247-751-11	CARBON	820	5%	1/2W	
R336	1-247-751-11	CARBON	820	5%	1/2W	
R353	1-247-716-11	CARBON	1.8K	5%	1/4W	
R354	1-249-417-11	CARBON	1K	5%	1/4W	
R355	1-249-417-11	CARBON	1K	5%	1/4W	
R356	1-249-423-11	CARBON	3.3K	5%	1/4W	
R357	1-249-423-11	CARBON	3.3K	5%	1/4W	
R358	1-249-433-11	CARBON	22K	5%	1/4W	
R359	1-249-435-11	CARBON	33K	5%	1/4W	
R360	1-249-417-11	CARBON	1K	5%	1/4W	
R361	1-247-903-00	CARBON	1M	5%	1/4W	
R362	1-247-903-00	CARBON	1M	5%	1/4W	
R363	1-249-429-11	CARBON	10K	5%	1/4W	
R364	1-249-428-11	CARBON	8.2K	5%	1/4W	
R365	1-249-441-11	CARBON	100K	5%	1/4W	
R366	1-249-417-11	CARBON	1K	5%	1/4W	
R367	1-249-417-11	CARBON	1K	5%	1/4W	
R368	1-249-417-11	CARBON	1K	5%	1/4W	
R369	1-247-903-00	CARBON	1M	5%	1/4W	
R370	1-249-417-11	CARBON	1K	5%	1/4W	
R371	⚠1-212-857-00	FUSIBLE	10	5%	1/4W	F
R372	⚠1-212-857-00	FUSIBLE	10	5%	1/4W	F
R373	1-249-416-11	CARBON	820	5%	1/4W	
R374	1-249-416-11	CARBON	820	5%	1/4W	
R375	1-249-416-11	CARBON	820	5%	1/4W	
R376	1-249-413-11	CARBON	470	5%	1/4W	
R377	1-249-413-11	CARBON	470	5%	1/4W	
R378	1-249-413-11	CARBON	470	5%	1/4W	
R379	1-249-413-11	CARBON	470	5%	1/4W	
R380	1-249-413-11	CARBON	470	5%	1/4W	
R381	1-247-887-00	CARBON	220K	5%	1/4W	
R382	1-249-413-11	CARBON	470	5%	1/4W	
R385	1-249-429-11	CARBON	10K	5%	1/4W	
R386	1-249-441-11	CARBON	100K	5%	1/4W	
R387	1-249-413-11	CARBON	470	5%	1/4W	
R388	1-249-425-11	CARBON	4.7K	5%	1/4W	
R389	1-249-441-11	CARBON	100K	5%	1/4W	
R390	1-249-407-11	CARBON	150	5%	1/4W	
R391	1-249-409-11	CARBON	220	5%	1/4W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		⟨ RELAY ⟩	
RY150	1-515-727-11	RELAY	
RY250	1-515-727-11	RELAY	
RY351	1-515-727-11	RELAY	
RY352	1-515-772-11	RELAY	

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* 1-637-626-11 BATTERY BOARD
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* A-2006-557-A CONTROL SW BOARD, COMPLETE (AEP, UK)

* A-2006-536-A CONTROL SW BOARD, COMPLETE (US)
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Ref. No.	Part No.	Description	Remark
	9-911-839-XX	CUSHION	
	* 4-911-676-01	SPACER, LED	
		⟨ CAPACITOR ⟩	
C702	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
C703	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C704	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C705	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C706	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
C708	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C709	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C710	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C711	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C712	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C713	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C714	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C715	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
C722	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C723	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C724	1-163-099-00	CERAMIC CHIP 18PF 5% 50V	
C725	1-163-227-11	CERAMIC CHIP 10PF 5% 50V	
C726	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
		⟨ CONNECTOR ⟩	
CN772	* 1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN773	* 1-564-339-00	PIN, CONNECTOR 5P	
		⟨ TRIMMER ⟩	
CT701	1-141-334-11	CAP, VAR, TRIMMER	
		⟨ DIODE ⟩	
D701	8-719-304-16	DIODE SEL2510W-D	
D702	8-719-918-76	DIODE GL-3PR9	
D705	8-719-934-34	DIODE AA3432S	
D706	8-719-934-34	DIODE AA3432S	
D707	8-719-304-16	DIODE SEL2510W-D	
D709	8-719-934-34	DIODE AA3432S	
D710	8-719-934-34	DIODE AA3432S	
D711	8-719-934-34	DIODE AA3432S	
D712	8-719-934-34	DIODE AA3432S	
D713	8-719-934-34	DIODE AA3432S	
D714	8-719-934-34	DIODE AA3432S	
D715	8-719-934-34	DIODE AA3432S	
D716	8-719-934-34	DIODE AA3432S	
D718	8-719-938-75	DIODE SB05-05CP-TA	
D719	8-719-938-75	DIODE SB05-05CP-TA	
D720	8-719-938-75	DIODE SB05-05CP-TA	
D721	8-719-938-75	DIODE SB05-05CP-TA	
		⟨ INDICATOR ⟩	
FL701	1-519-601-11	INDICATOR TUBE, FLUORESCENT	
		⟨ IC ⟩	
IC701	8-759-513-16	IC MSC62408-020GS-K	
IC702	8-752-326-33	IC CXK1011M	
IC703	8-759-009-05	IC MC14051BF	
IC704	8-759-009-05	IC MC14051BF	
IC705	8-759-009-10	IC MC14069UBF	
IC706	8-759-502-84	IC LM393M	
IC707	8-759-630-70	IC M50782FP	
IC708	8-752-323-64	IC CXK5816M-12L	
IC709	8-759-500-05	IC MSM6338MS-K	
IC712	8-759-504-23	IC RF5C62	
		⟨ TRANSISTOR ⟩	
Q701	8-729-901-04	TRANSISTOR DTA114EK	
Q702	8-729-901-04	TRANSISTOR DTA114EK	
Q705	8-729-901-04	TRANSISTOR DTA114EK	
Q706	8-729-901-04	TRANSISTOR DTA114EK	
Q707	8-729-901-04	TRANSISTOR DTA114EK	
Q709	8-729-901-04	TRANSISTOR DTA114EK	
Q710	8-729-901-04	TRANSISTOR DTA114EK	
Q711	8-729-901-04	TRANSISTOR DTA114EK	
Q712	8-729-901-04	TRANSISTOR DTA114EK	
Q713	8-729-901-04	TRANSISTOR DTA114EK	
Q714	8-729-901-04	TRANSISTOR DTA114EK	
Q715	8-729-901-04	TRANSISTOR DTA114EK	
Q716	8-729-901-04	TRANSISTOR DTA114EK	
Q717	8-729-901-04	TRANSISTOR DTA114EK	
Q718	8-729-807-16	TRANSISTOR 2SD1621-R	
Q719	8-729-900-98	TRANSISTOR DTC143TK	
Q720	8-729-900-98	TRANSISTOR DTC143TK	
Q721	8-729-900-98	TRANSISTOR DTC143TK	

CONTROL SW

Ref. No.	Part No.	Description	Remark
Q722	8-729-900-98	TRANSISTOR DTC143TK	
Q723	8-729-900-98	TRANSISTOR DTC143TK	
Q724	8-729-900-98	TRANSISTOR DTC143TK	
Q725	8-729-900-98	TRANSISTOR DTC143TK	
Q726	8-729-900-98	TRANSISTOR DTC143TK	
Q727	8-729-807-16	TRANSISTOR 2SD1621-R	
Q728	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q730	8-729-901-00	TRANSISTOR DTC124EK	
Q732	8-729-807-16	TRANSISTOR 2SD1621-R	
		〈 RESISTOR 〉	
R701	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R702	1-216-045-00	METAL CHIP 680 5% 1/10W	
R703	1-216-047-00	METAL CHIP 820 5% 1/10W	
R704	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R705	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R706	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R707	1-216-045-00	METAL CHIP 680 5% 1/10W	
R708	1-216-047-00	METAL CHIP 820 5% 1/10W	
R709	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R710	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R711	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R712	1-216-045-00	METAL CHIP 680 5% 1/10W	
R713	1-216-047-00	METAL CHIP 820 5% 1/10W	
R714	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R715	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R716	1-216-045-00	METAL CHIP 680 5% 1/10W	
R717	1-216-047-00	METAL CHIP 820 5% 1/10W	
R718	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R719	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R720	1-216-045-00	METAL CHIP 680 5% 1/10W	
R721	1-216-047-00	METAL CHIP 820 5% 1/10W	
R722	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R723	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R724	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R725	1-216-045-00	METAL CHIP 680 5% 1/10W	
R726	1-216-047-00	METAL CHIP 820 5% 1/10W	
R727	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R728	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R729	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R730	1-216-045-00	METAL CHIP 680 5% 1/10W	
R731	1-216-047-00	METAL CHIP 820 5% 1/10W	
R732	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R733	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R734	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R735	1-216-045-00	METAL CHIP 680 5% 1/10W	
R736	1-216-047-00	METAL CHIP 820 5% 1/10W	
R737	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R739	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R740	1-216-045-00	METAL CHIP 680 5% 1/10W	
R741	1-216-047-00	METAL CHIP 820 5% 1/10W	
R742	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R743	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R744	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R745	1-216-045-00	METAL CHIP 680 5% 1/10W	
R746	1-216-047-00	METAL CHIP 820 5% 1/10W	
R747	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R749	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R750	1-216-045-00	METAL CHIP 680 5% 1/10W	
R751	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R753	1-216-063-00	METAL CHIP 3.9K 5% 1/10W (AEP, UK)	
R754	1-216-045-00	METAL CHIP 680 5% 1/10W (US)	
R755	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R756	1-216-045-00	METAL CHIP 680 5% 1/10W	
R757	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R758	1-216-045-00	METAL CHIP 680 5% 1/10W	
R759	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R760	1-216-045-00	METAL CHIP 680 5% 1/10W	
R761	1-216-033-00	METAL CHIP 220 5% 1/10W	
R762	1-216-033-00	METAL CHIP 220 5% 1/10W	
R765	1-216-033-00	METAL CHIP 220 5% 1/10W	
R766	1-216-033-00	METAL CHIP 220 5% 1/10W	
R767	1-216-033-00	METAL CHIP 220 5% 1/10W	
R769	1-216-033-00	METAL CHIP 220 5% 1/10W	
R770	1-216-033-00	METAL CHIP 220 5% 1/10W	
R771	1-216-033-00	METAL CHIP 220 5% 1/10W	
R772	1-216-033-00	METAL CHIP 220 5% 1/10W	
R773	1-216-033-00	METAL CHIP 220 5% 1/10W	
R774	1-216-033-00	METAL CHIP 220 5% 1/10W	
R775	1-216-033-00	METAL CHIP 220 5% 1/10W	
R776	1-216-033-00	METAL CHIP 220 5% 1/10W	
R777	1-216-682-11	METAL CHIP 20K 0.5% 1/10W	
R778	1-216-682-11	METAL CHIP 20K 0.5% 1/10W	
R779	1-216-682-11	METAL CHIP 20K 0.5% 1/10W	
R780	1-216-682-11	METAL CHIP 20K 0.5% 1/10W	
R781	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R782	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R783	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R784	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R785	1-216-682-11	METAL CHIP 20K 0.5% 1/10W	
R786	1-216-682-11	METAL CHIP 20K 0.5% 1/10W	
R787	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R788	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R789	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R790	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R791	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R792	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R793	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R794	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R795	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R796	1-216-089-00	METAL CHIP 47K 5% 1/10W	

CONTROL SW | DIGITAL

Ref. No.	Part No.	Description				Remark
R797	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R800	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R802	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R803	1-216-047-00	METAL CHIP	820	5%	1/10W	
R804	1-216-047-00	METAL CHIP	820	5%	1/10W	
R805	⚠1-212-851-00	FUSIBLE	5.6	5%	1/4W	F
R806	⚠1-212-851-00	FUSIBLE	5.6	5%	1/4W	F
R809	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R810	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R811	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R813	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R814	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R815	1-216-033-00	METAL CHIP	220	5%	1/10W	
R816	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R817	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R818	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R819	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R820	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R821	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R822	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R823	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R824	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R827	1-216-047-00	METAL CHIP	820	5%	1/10W	
R829	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	

〈 SWITCH 〉

Ref. No.	Part No.	Description
S701	1-554-596-21	SWITCH, KEY BOARD (▲ OPEN/CLOSE)
S702	1-554-596-21	SWITCH, KEY BOARD (■)
S704	1-554-596-21	SWITCH, KEY BOARD (▶)
S705	1-554-596-21	SWITCH, KEY BOARD (⏮)
S706	1-554-596-21	SWITCH, KEY BOARD (⏭)
S707	1-554-596-21	SWITCH, KEY BOARD (◀◀)
S708	1-554-596-21	SWITCH, KEY BOARD (▶▶)
S709	1-554-596-21	SWITCH, KEY BOARD (● REC)
S710	1-554-596-21	SWITCH, KEY BOARD (II PAUSE)
S711	1-554-596-21	SWITCH, KEY BOARD (O REC MUTE)
S712	1-554-596-21	SWITCH, KEY BOARD (COUNTER MODE)
S713	1-554-596-21	SWITCH, KEY BOARD (COUNTER RESET)
S714	1-554-596-21	SWITCH, KEY BOARD (COUNTER MEMORY)
S715	1-554-596-21	SWITCH, KEY BOARD (DATE RECORDED)
S716	1-554-596-21	SWITCH, KEY BOARD (DATE PRESENT)
S717	1-554-596-21	SWITCH, KEY BOARD (SKIP PLAY)
S718	1-554-596-21	SWITCH, KEY BOARD (FADER)
S720	1-554-596-21	SWITCH, KEY BOARD (REPEAT)
S722	1-554-596-21	SWITCH, KEY BOARD (MARGIN RESET)
S723	1-554-596-21	SWITCH, KEY BOARD (1)
S724	1-554-596-21	SWITCH, KEY BOARD (2)
S725	1-554-596-21	SWITCH, KEY BOARD (3)
S726	1-554-596-21	SWITCH, KEY BOARD (CLOCK SET)
S727	1-554-596-21	SWITCH, KEY BOARD (4)
S728	1-554-596-21	SWITCH, KEY BOARD (5)
S729	1-554-596-21	SWITCH, KEY BOARD (6)
S730	1-554-596-21	SWITCH, KEY BOARD (MUSIC SCAN/+)
S731	1-554-596-21	SWITCH, KEY BOARD (CLEAR)
S732	1-554-596-21	SWITCH, KEY BOARD (7)
S733	1-554-596-21	SWITCH, KEY BOARD (8)
S734	1-554-596-21	SWITCH, KEY BOARD (9)
S735	1-554-596-21	SWITCH, KEY BOARD (0/-)
S736	1-554-596-21	SWITCH, KEY BOARD (START ID AUTO)
S737	1-554-596-21	SWITCH, KEY BOARD (START ID WEITE)
S738	1-554-596-21	SWITCH, KEY BOARD (SKIP ID WRITE)
S739	1-554-596-21	SWITCH, KEY BOARD (END ID WRITE)
S740	1-554-596-21	SWITCH, KEY BOARD (DISPLAY MODE)
S741	1-554-596-21	SWITCH, KEY BOARD (START ID RENUMBER)
S742	1-554-596-21	SWITCH, KEY BOARD (START ID ERASE)
S743	1-554-596-21	SWITCH, KEY BOARD (SKIP ID ERASE)
S744	1-554-596-21	SWITCH, KEY BOARD (END ID ERASE)

〈 CRYSTAL 〉

Ref. No.	Part No.	Description
X701	1-567-775-11	VIBRATOR, CERAMIC (4.19MHZ)
X702	1-567-098-00	CRYSTAL (32.8KHZ)

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* A-2006-587-A DIGITAL BOARD, COMPLETE
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〈 CONNECTOR 〉

Ref. No.	Part No.	Description
BAT501	* 1-564-336-81	PIN, CONNECTOR 2P

〈 CAPACITOR 〉

Ref. No.	Part No.	Description			
C502	1-126-022-11	ELECT	47uF	20%	16V
C503	1-136-153-00	FILM	0.01uF	5%	50V
C504	1-136-158-00	FILM	0.027uF	5%	50V
C505	1-130-473-00	MYLAR	0.0015uF	5%	50V
C506	1-126-022-11	ELECT	47uF	20%	10V
C507	1-136-153-00	FILM	0.01uF	5%	50V
C508	1-136-158-00	FILM	0.027uF	5%	50V
C509	1-130-473-00	MYLAR	0.0015uF	5%	50V
C510	1-126-022-11	ELECT	47uF	20%	10V
C511	1-162-290-31	CERAMIC	470PF	10%	50V
C512	1-130-479-00	MYLAR	0.0047uF	5%	50V
C513	1-126-049-11	ELECT	22uF	20%	10V
C514	1-162-290-31	CERAMIC	470PF	10%	50V
C515	1-130-479-00	MYLAR	0.0047uF	5%	50V
C516	1-126-049-11	ELECT	22uF	20%	10V
C517	1-136-153-00	FILM	0.01uF	5%	50V
C518	1-136-158-00	FILM	0.027uF	5%	50V
C519	1-130-473-00	MYLAR	0.0015uF	5%	50V
C520	1-136-153-00	FILM	0.01uF	5%	50V
C521	1-130-473-00	MYLAR	0.0015uF	5%	50V

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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Ref. No.	Part No.	Description				Remark
C522	1-136-158-00	FILM	0.027uF	5%	50V	
C523	1-126-157-11	ELECT	10uF	20%	16V	
C524	1-126-022-11	ELECT	47uF	20%	16V	
C525	1-126-022-11	ELECT	47uF	20%	16V	
C527	1-136-165-00	FILM	0.1uF	5%	50V	
C528	1-126-049-11	ELECT	22uF	20%	10V	
C529	1-124-994-11	ELECT	100uF	20%	10V	
C535	1-136-165-00	FILM	0.1uF	5%	50V	
C536	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C537	1-136-153-00	FILM	0.01uF	5%	50V	
C538	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C539	1-136-153-00	FILM	0.01uF	5%	50V	
C540	1-126-022-11	ELECT	47uF	20%	10V	
C542	1-164-159-11	CERAMIC	0.1uF		50V	
C543	1-124-994-11	ELECT	100uF	20%	10V	
C545	1-126-022-11	ELECT	47uF	20%	16V	
C546	1-164-159-11	CERAMIC	0.1uF		50V	
C547	1-164-159-11	CERAMIC	0.1uF		50V	
C548	1-124-994-11	ELECT	100uF	20%	10V	
C549	1-124-994-11	ELECT	100uF	20%	10V	
C550	1-164-159-11	CERAMIC	0.1uF		50V	
C551	1-164-159-11	CERAMIC	0.1uF		50V	
C552	1-136-165-00	FILM	0.1uF	5%	50V	
C553	1-136-177-00	FILM	1uF	5%	50V	
C554	1-164-159-11	CERAMIC	0.1uF		50V	
C555	1-164-159-11	CERAMIC	0.1uF		50V	
C556	1-162-211-31	CERAMIC	33PF	5%	50V	
C557	1-136-165-00	FILM	0.1uF	5%	50V	
C558	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C559	1-126-157-11	ELECT	10uF	20%	16V	
C560	1-126-022-11	ELECT	47uF	20%	10V	
C561	1-164-159-11	CERAMIC	0.1uF		50V	
C562	1-162-201-31	CERAMIC	12PF	5%	50V	
C563	1-162-201-31	CERAMIC	12PF	5%	50V	
C564	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C565	1-136-177-00	FILM	1uF	5%	50V	
C566	1-124-994-11	ELECT	100uF	20%	10V	
C567	1-164-159-11	CERAMIC	0.1uF		50V	
C569	1-162-201-31	CERAMIC	12PF	5%	50V	
C570	1-162-201-31	CERAMIC	12PF	5%	50V	
C571	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C572	1-162-199-31	CERAMIC	10PF	5%	50V	
C573	1-162-199-31	CERAMIC	10PF	5%	50V	
C574	1-162-179-11	CERAMIC	0.1uF		50V	
C576	1-164-159-11	CERAMIC	0.1uF		50V	
C577	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C578	1-164-159-11	CERAMIC	0.1uF		50V	
C579	1-124-994-11	ELECT	100uF	20%	10V	
C580	1-164-159-11	CERAMIC	0.1uF		50V	
C582	1-164-159-11	CERAMIC	0.1uF		50V	
C583	1-164-159-11	CERAMIC	0.1uF		50V	
C584	1-164-159-11	CERAMIC	0.1uF		50V	
C585	1-126-022-11	ELECT	47uF	20%	10V	
C586	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C587	1-126-044-11	ELECT	1uF	20%	50V	
C589	1-136-165-00	FILM	0.1uF	5%	50V	
C590	1-126-022-11	ELECT	47uF	20%	10V	
C591	1-162-207-31	CERAMIC	22PF	5%	50V	
C592	1-136-165-00	FILM	0.1uF	5%	50V	
C593	1-126-022-11	ELECT	47uF	20%	10V	
C595	1-164-159-11	CERAMIC	0.1uF		50V	
C596	1-164-159-11	CERAMIC	0.1uF		50V	
C598	1-124-994-11	ELECT	100uF	20%	10V	
C599	1-136-165-00	FILM	0.1uF	5%	50V	
C600	1-136-153-00	FILM	0.01uF	5%	50V	
C601	1-136-165-00	FILM	0.1uF	5%	50V	
C602	1-136-165-00	FILM	0.1uF	5%	50V	
C604	1-126-022-11	ELECT	47uF	20%	10V	
C605	1-136-165-00	FILM	0.1uF	5%	50V	
C606	1-126-157-11	ELECT	10uF	20%	16V	
C607	1-124-994-11	ELECT	100uF	20%	10V	
C608	1-164-159-11	CERAMIC	0.1uF		50V	
C609	1-136-153-00	FILM	0.01uF	5%	50V	
C610	1-136-157-00	FILM	0.022uF	5%	50V	
C611	1-136-157-00	FILM	0.022uF	5%	50V	
C612	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C613	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C614	1-136-153-00	FILM	0.01uF	5%	50V	
C615	1-136-153-00	FILM	0.01uF	5%	50V	
C616	1-162-290-31	CERAMIC	470PF	10%	50V	
C617	1-161-377-00	CERAMIC	0.0047uF	30%	16V	
C618	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C619	1-124-994-11	ELECT	100uF	20%	10V	
C620	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C622	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C623	1-124-994-11	ELECT	100uF	20%	10V	
C624	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C625	1-162-199-31	CERAMIC	10PF	5%	50V	
C626	1-164-159-11	CERAMIC	0.1uF		50V	
C627	1-164-159-11	CERAMIC	0.1uF		50V	
C628	1-136-153-00	FILM	0.01uF	5%	50V	
C629	1-164-159-11	CERAMIC	0.1uF		50V	
C630	1-124-925-11	ELECT	2.2uF	20%	100V	
C631	1-136-177-00	FILM	1uF	5%	50V	
C634	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C635	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C636	1-136-165-00	FILM	0.1uF	5%	50V	
C637	1-136-165-00	FILM	0.1uF	5%	50V	
C638	1-136-165-00	FILM	0.1uF	5%	50V	
C640	1-164-159-11	CERAMIC	0.1uF		50V	

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Ref. No.	Part No.	Description	Remark
C641	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C642	1-136-153-00	FILM 0.01uF 5% 50V	
C644	1-162-179-11	CREAMIC 0.1uF 50V	
		〈 CONNECTOR 〉	
CN501	* 1-564-715-11	PIN, CONNECTOR (SMALL TYPE) 13P	
CN502	* 1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P	
CN503	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN504	* 1-564-511-11	PLUG, CONNECTOR 8P	
CN505	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN506	* 1-564-339-00	PIN, CONNECTOR 5P	
CN507	* 1-564-714-11	PIN, CONNECTOR (SMALL TYPE) 12P	
CN508	* 1-564-711-11	PIN, CONNECTOR (SMALL TYPE) 9P	
CN531	* 1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P	
CN532	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN533	* 1-564-339-61	PIN, CONNECTOR 5P	
CN535	* 1-564-338-61	PIN, CONNECTOR 4P	
CN537	* 1-564-337-61	PIN, CONNECTOR 3P	
CN551	* 1-564-514-11	PLUG, CONNECTOR 11P	
CN552	* 1-564-514-11	PLUG, CONNECTOR 11P	
CN555	* 1-564-337-00	PIN, CONNECTOR 3P	
CN571	* 1-506-503-11	PIN, CONNECTOR 9P	
CN572	* 1-564-339-61	PIN, CONNECTOR 5P	
CN573	* 1-564-336-00	PIN, CONNECTOR 2P	
CN574	* 1-564-509-11	PLUG, CONNECTOR 6P	
CN591	* 1-564-508-11	PLUG, CONNECTOR 5P	
CN592	* 1-564-510-11	PLUG, CONNECTOR 7P	
CN593	* 1-564-339-00	PIN, CONNECTOR 5P	
CN595	* 1-564-336-61	PIN, CONNECTOR 2P	
CN596	* 1-564-336-71	PIN, CONNECTOR 2P	
		〈 DIODE 〉	
D501	8-719-109-72	DIODE RD3.9ES-B2	
D502	8-719-109-66	DIODE RD3.3ES-B2	
D505	8-719-200-77	DIODE 10E2N	
		〈 IC 〉	
IC501	8-752-818-41	IC CXP80524-020Q	
IC502	8-752-339-43	IC CXD2601AQ	
IC503	8-752-339-43	IC CXD2601AQ	
IC504	8-759-947-57	IC CXD1136Q	
IC505	8-752-030-63	IC CXA1046M	
IC506	8-752-330-68	IC CXK58257M-12L	
IC507	8-752-330-68	IC CXK58257M-12L	
IC508	8-759-135-80	IC uPC358C	
IC509	8-759-135-80	IC uPC358C	
IC510	8-759-135-80	IC uPC358C	
IC511	8-759-135-80	IC uPC358C	
IC512	8-759-916-20	IC SN74HC14AN	
IC513	8-759-633-65	IC M54641L	
IC514	8-759-633-65	IC M54641L	

Ref. No.	Part No.	Description	Remark
IC515	8-759-987-16	IC LM393P	
IC516	8-759-239-47	IC TC74HC123AP	
IC517	8-759-144-82	IC uPC2405HF	
IC519	8-759-036-44	IC MC74AC74N	
IC520	8-759-916-14	IC SN74HC04AN	
IC521	8-759-916-12	IC SN74HC00AN	
IC522	8-759-135-80	IC uPC358C	
IC523	8-759-917-18	IC SN74HCU04AN	
IC525	8-759-916-50	IC SN74HC157AN	
IC526	8-759-916-14	IC SN74HC04AN	
IC527	8-759-916-55	IC SN74HC175AN	
IC528	8-759-916-14	IC SN74HC04AN	
IC529	8-759-906-24	IC SN74LS624N	
IC530	8-759-916-50	IC SN74HC157AN	
IC531	8-759-916-55	IC SN74HC175AN	
IC532	8-759-916-50	IC SN74HC157AN	
IC533	8-759-803-70	IC LC74HC08	
IC534	8-759-504-22	IC TDA1543	
IC535	8-759-135-80	IC uPC358C	
IC536	8-759-135-80	IC uPC358C	
		〈 COIL 〉	
L501	1-410-509-11	INDUCTOR 10uH	
L502	1-410-509-11	INDUCTOR 10uH	
L503	1-410-509-11	INDUCTOR 10uH	
L504	1-410-509-11	INDUCTOR 10uH	
L505	1-410-509-11	INDUCTOR 10uH	
L506	1-410-509-11	INDUCTOR 10uH	
L507	1-410-509-11	INDUCTOR 10uH	
L508	1-410-498-11	INDUCTOR 1.2uH	
L509	1-410-509-11	INDUCTOR 10uH	
L511	1-410-509-11	INDUCTOR 10uH	
L513	1-410-953-11	INDUCTOR, SMALL TYPE	
L514	1-410-509-11	INDUCTOR 10uH	
L516	* 1-410-858-11	INDUCTOR 0uH	
		〈 TRANSISTOR 〉	
Q1	8-729-900-80	TRANSISTOR DTC114ES	
Q2	8-729-900-80	TRANSISTOR DTC114ES	
Q501	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q502	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q503	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q504	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q505	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q506	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q507	8-729-900-80	TRANSISTOR DTC114ES	
Q509	8-729-900-80	TRANSISTOR DTC114ES	
Q510	8-729-801-84	TRANSISTOR 2SB1013-4	
Q511	8-729-801-93	TRANSISTOR 2SD1387-3	
Q512	8-729-900-80	TRANSISTOR DTC114ES	
Q514	8-729-900-80	TRANSISTOR DTC114ES	

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Ref. No.	Part No.	Description				Remark
Q515	8-729-801-84	TRANSISTOR 2SB1013-4				
Q516	8-729-801-93	TRANSISTOR 2SD1387-3				
Q517	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q518	8-729-924-90	TRANSISTOR 2SB1370-EF				
Q519	8-729-900-80	TRANSISTOR DTC114ES				
Q520	8-729-900-80	TRANSISTOR DTC114ES				
Q521	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q523	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q524	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q525	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q526	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q527	8-729-900-80	TRANSISTOR DTC114ES				
Q528	8-729-900-80	TRANSISTOR DTC114ES				
Q530	8-729-900-80	TRANSISTOR DTC114ES				
Q531	8-729-900-80	TRANSISTOR DTC114ES				
Q532	8-729-900-80	TRANSISTOR DTC114ES				
Q533	8-729-900-80	TRANSISTOR DTC114ES				
Q534	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q535	8-729-900-80	TRANSISTOR DTC114ES				
		〈 RESISTOR 〉				
R1	1-249-413-11	CARBON	470	5%	1/4W	
R2	1-249-429-11	CARBON	10K	5%	1/4W	
R501	1-249-429-11	CARBON	10K	5%	1/4W	
R502	1-249-429-11	CARBON	10K	5%	1/4W	
R503	1-249-429-11	CARBON	10K	5%	1/4W	
R504	1-249-429-11	CARBON	10K	5%	1/4W	
R505	1-249-429-11	CARBON	10K	5%	1/4W	
R506	1-249-429-11	CARBON	10K	5%	1/4W	
R507	1-249-441-11	CARBON	100K	5%	1/4W	
R508	1-249-429-11	CARBON	10K	5%	1/4W	
R509	1-249-429-11	CARBON	10K	5%	1/4W	
R510	1-249-417-11	CARBON	1K	5%	1/4W	
R511	1-249-417-11	CARBON	1K	5%	1/4W	
R512	1-249-405-11	CARBON	100	5%	1/4W	
R513	1-249-417-11	CARBON	1K	5%	1/4W	
R514	1-249-408-11	CARBON	180	5%	1/4W	
R515	1-249-441-11	CARBON	100K	5%	1/4W	
R516	1-249-429-11	CARBON	10K	5%	1/4W	
R517	1-249-417-11	CARBON	1K	5%	1/4W	
R518	1-249-429-11	CARBON	10K	5%	1/4W	
R519	1-249-417-11	CARBON	1K	5%	1/4W	
R520	1-249-405-11	CARBON	100	5%	1/4W	
R521	1-249-417-11	CARBON	1K	5%	1/4W	
R522	1-249-408-11	CARBON	180	5%	1/4W	
R523	1-249-429-11	CARBON	10K	5%	1/4W	
R524	1-249-429-11	CARBON	10K	5%	1/4W	
R525	1-249-429-11	CARBON	10K	5%	1/4W	
R526	1-249-429-11	CARBON	10K	5%	1/4W	
R527	1-249-429-11	CARBON	10K	5%	1/4W	
R528	1-249-429-11	CARBON	10K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R529	1-249-409-11	CARBON	220	5%	1/4W	
R530	1-249-409-11	CARBON	220	5%	1/4W	
R531	1-249-409-11	CARBON	220	5%	1/4W	
R532	1-249-409-11	CARBON	220	5%	1/4W	
R533	1-249-417-11	CARBON	1K	5%	1/4W	
R534	1-249-441-11	CARBON	100K	5%	1/4W	
R535	1-249-423-11	CARBON	3.3K	5%	1/4W	
R536	1-249-417-11	CARBON	1K	5%	1/4W	
R537	1-249-429-11	CARBON	10K	5%	1/4W	
R538	1-249-429-11	CARBON	10K	5%	1/4W	
R539	1-249-419-11	CARBON	1.5K	5%	1/4W	
R540	1-249-407-11	CARBON	150	5%	1/4W	
R541	1-249-417-11	CARBON	1K	5%	1/4W	
R542	1-249-482-11	CARBON	4.7	5%	1/2W	
R543	1-249-424-11	CARBON	3.9K	5%	1/4W	
R549	1-249-429-11	CARBON	10K	5%	1/4W	
R550	1-249-417-11	CARBON	1K	5%	1/4W	
R551	1-249-435-11	CARBON	33K	5%	1/4W	
R552	1-249-435-11	CARBON	33K	5%	1/4W	
R553	1-249-423-11	CARBON	3.3K	5%	1/4W	
R554	1-249-423-11	CARBON	3.3K	5%	1/4W	
R555	1-249-417-11	CARBON	1K	5%	1/4W	
R556	1-249-435-11	CARBON	33K	5%	1/4W	
R557	1-249-429-11	CARBON	10K	5%	1/4W	
R558	1-249-417-11	CARBON	1K	5%	1/4W	
R559	1-249-435-11	CARBON	33K	5%	1/4W	
R560	1-249-435-11	CARBON	33K	5%	1/4W	
R561	1-249-423-11	CARBON	3.3K	5%	1/4W	
R562	1-249-423-11	CARBON	3.3K	5%	1/4W	
R563	1-249-417-11	CARBON	1K	5%	1/4W	
R564	1-249-435-11	CARBON	33K	5%	1/4W	
R565	1-249-429-11	CARBON	10K	5%	1/4W	
R567	1-247-804-11	CARBON	75	5%	1/4W	
R569	1-247-804-11	CARBON	75	5%	1/4W	
R570	1-249-425-11	CARBON	4.7K	5%	1/4W	
R571	1-249-429-11	CARBON	10K	5%	1/4W	
R572	1-249-433-11	CARBON	22K	5%	1/4W	
R573	1-249-425-11	CARBON	4.7K	5%	1/4W	
R574	1-249-425-11	CARBON	4.7K	5%	1/4W	
R575	1-249-429-11	CARBON	10K	5%	1/4W	
R576	1-249-433-11	CARBON	22K	5%	1/4W	
R577	1-249-425-11	CARBON	4.7K	5%	1/4W	
R578	1-249-433-11	CARBON	22K	5%	1/4W	
R580	1-249-433-11	CARBON	22K	5%	1/4W	
R581	1-249-433-11	CARBON	22K	5%	1/4W	
R582	1-249-433-11	CARBON	22K	5%	1/4W	
R583	1-249-433-11	CARBON	22K	5%	1/4W	
R584	1-249-425-11	CARBON	4.7K	5%	1/4W	
R585	1-249-425-11	CARBON	4.7K	5%	1/4W	
R586	1-249-425-11	CARBON	4.7K	5%	1/4W	

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Ref. No.	Part No.	Description				Remark
R587	1-249-417-11	CARBON	1K	5%	1/4W	
R588	1-249-417-11	CARBON	1K	5%	1/4W	
R589	1-249-425-11	CARBON	4.7K	5%	1/4W	
R590	1-249-425-11	CARBON	4.7K	5%	1/4W	
R591	1-249-425-11	CARBON	4.7K	5%	1/4W	
R592	1-249-425-11	CARBON	4.7K	5%	1/4W	
R594	1-249-425-11	CARBON	4.7K	5%	1/4W	
R595	1-249-433-11	CARBON	22K	5%	1/4W	
R597	1-249-425-11	CARBON	4.7K	5%	1/4W	
R598	1-249-433-11	CARBON	22K	5%	1/4W	
R599	1-249-429-11	CARBON	10K	5%	1/4W	
R600	1-249-409-11	CARBON	220	5%	1/4W	
R601	1-249-409-11	CARBON	220	5%	1/4W	
R602	1-249-413-11	CARBON	470	5%	1/4W	
R603	1-249-413-11	CARBON	470	5%	1/4W	
R604	1-249-409-11	CARBON	220	5%	1/4W	
R605	1-249-413-11	CARBON	470	5%	1/4W	
R606	1-249-417-11	CARBON	1K	5%	1/4W	
R609	1-249-425-11	CARBON	4.7K	5%	1/4W	
R610	1-249-437-11	CARBON	47K	5%	1/4W	
R611	1-249-421-11	CARBON	2.2K	5%	1/4W	
R612	1-249-417-11	CARBON	1K	5%	1/4W	
R614	1-249-435-11	CARBON	33K	5%	1/4W	
R615	1-249-429-11	CARBON	10K	5%	1/4W	
R616	1-249-421-11	CARBON	2.2K	5%	1/4W	
R617	1-249-429-11	CARBON	10K	5%	1/4W	
R618	1-249-421-11	CARBON	2.2K	5%	1/4W	
R619	1-249-401-11	CARBON	47	5%	1/4W	
R620	1-249-409-11	CARBON	220	5%	1/4W	
R621	1-249-409-11	CARBON	220	5%	1/4W	
R622	1-249-401-11	CARBON	47	5%	1/4W	
R623	1-249-409-11	CARBON	220	5%	1/4W	
R624	1-249-409-11	CARBON	220	5%	1/4W	
R625	1-247-899-11	CARBON	680K	5%	1/4W	
R627	1-249-425-11	CARBON	4.7K	5%	1/4W	
R628	1-249-417-11	CARBON	1K	5%	1/4W	
R629	1-249-433-11	CARBON	22K	5%	1/4W	
R630	1-249-425-11	CARBON	4.7K	5%	1/4W	
R631	1-249-415-11	CARBON	680	5%	1/4W	
R632	1-249-439-11	CARBON	68K	5%	1/4W	
R633	1-249-425-11	CARBON	4.7K	5%	1/4W	
R634	1-249-440-11	CARBON	82K	5%	1/4W	
R635	1-249-427-11	CARBON	6.8K	5%	1/4W	
R636	1-249-440-11	CARBON	82K	5%	1/4W	
R637	1-249-425-11	CARBON	4.7K	5%	1/4W	
R638	1-249-429-11	CARBON	10K	5%	1/4W	
R639	1-249-417-11	CARBON	1K	5%	1/4W	
R640	1-249-417-11	CARBON	1K	5%	1/4W	
R641	1-249-424-11	CARBON	3.9K	5%	1/4W	
R642	1-249-435-11	CARBON	33K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R643	1-249-435-11	CARBON	33K	5%	1/4W	
R644	1-249-417-11	CARBON	1K	5%	1/4W	
R645	1-249-437-11	CARBON	47K	5%	1/4W	
R646	1-249-411-11	CARBON	330	5%	1/4W	
R647	1-249-437-11	CARBON	47K	5%	1/4W	
R648	1-249-439-11	CARBON	68K	5%	1/4W	
R649	1-249-405-11	CARBON	100	5%	1/4W	
R650	1-249-417-11	CARBON	1K	5%	1/4W	
R651	1-249-401-11	CARBON	47	5%	1/4W	
R652	1-249-401-11	CARBON	47	5%	1/4W	
R656	1-249-417-11	CARBON	1K	5%	1/4W	
R657	1-249-401-11	CARBON	47	5%	1/4W	
R658	1-249-417-11	CARBON	1K	5%	1/4W	
R659	1-249-413-11	CARBON	470	5%	1/4W	
R660	1-249-413-11	CARBON	470	5%	1/4W	
R661	1-249-393-11	CARBON	10	5%	1/4W	
R663	1-249-433-11	CARBON	22K	5%	1/4W	
R664	1-249-425-11	CARBON	4.7K	5%	1/4W	
R665	1-249-441-11	CARBON	100K	5%	1/4W	
R666	1-249-425-11	CARBON	4.7K	5%	1/4W	
R667	1-249-441-11	CARBON	100K	5%	1/4W	
R668	1-249-433-11	CARBON	22K	5%	1/4W	
R669	1-249-441-11	CARBON	100K	5%	1/4W	
R670	1-249-429-11	CARBON	10K	5%	1/4W	
R672	1-249-407-11	CARBON	150	5%	1/4W	
R673	1-247-891-00	CARBON	330K	5%	1/4W	
R674	1-249-417-11	CARBON	1K	5%	1/4W	
R675	1-249-429-11	CARBON	10K	5%	1/4W	
R676	1-249-441-11	CARBON	100K	5%	1/4W	
R680	1-249-410-11	CARBON	270	5%	1/4W	
R681	1-249-405-11	CARBON	100	5%	1/4W	

〈 VARIABLE RESISTOR 〉

RV501	1-238-019-11	RES, ADJ, CARBON 47K
RV502	1-238-019-11	RES, ADJ, CARBON 47K
RV503	1-238-016-11	RES, ADJ, CARBON 10K
RV504	1-238-016-11	RES, ADJ, CARBON 10K
RV505	1-238-015-11	RES, ADJ, CARBON 4.7K
RV506	1-238-015-11	RES, ADJ, CARBON 4.7K

〈 RELAY 〉

RY518	1-515-640-11	RELAY (5V)

〈 CRYSTAL 〉

X501	1-567-816-11	VIBRATOR, CRYSTAL (18.8MHZ)
X502	1-567-815-11	VIBRATOR, CRYSTAL (22.6MHZ)
X503	1-578-667-11	VIBRATOR, CRYSTAL (49.1MHZ)

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DIGITAL I/O (OPT) DIGITAL IN (COAX) DIGITAL OUT (COAX)
DIODE HEADPHONE JACK HEADPHONE VOL LINE FILTER

Ref. No.	Part No.	Description	Remark
	* 1-637-618-11	DIGITAL I/O (OPT) BOARD	
		**********************	
		‹ CAPACITOR ›	
C677	1-162-179-11	CERAMIC 0.1uF 50V	
C678	1-126-023-11	ELECT 100uF 20% 16V	
C679	1-162-179-11	CERAMIC 0.1uF 50V	
		‹ IC ›	
CP671	8-749-921-11	IC GP1F32R (OPTICAL IN)	
CP672	8-749-921-12	IC GP1F32T (OPTICAL OUT)	
		‹ COIL ›	
L510	1-410-509-11	INDUCTOR 10uH	
L512	1-410-509-11	INDUCTOR 10uH	

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Ref. No.	Part No.	Description	Remark
	* 1-637-616-11	DIGITAL IN (COAX) BOARD	
		**********************	
		‹ CAPACITOR ›	
	1-126-059-11	ELECT 10MF 20% 50V	
		‹ JACK ›	
J601	1-563-079-11	JACK, PIN 1P (DIGITAL IN)	
		‹ RESISTOR ›	
R608	1-247-804-11	CARBON 75 5% 1/4W	

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Ref. No.	Part No.	Description	Remark
	* 1-637-617-11	DIGITAL OUT (COAX) BOARD	
		***********************	
	* 4-916-318-01	PLATE, GROUND	
		‹ CAPACITOR ›	
C182	1-162-179-11	CERAMIC 0.1uF 50V	
		‹ JACK ›	
J181	1-566-922-21	JACK, PIN 1P (DIGITAL OUT)	
		‹ RESISTOR ›	
R183	1-247-804-11	CARBON 75 5% 1/4W	
		‹ COIL ›	
T182	1-459-795-11	COIL (WITH CORE)	

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Ref. No.	Part No.	Description	Remark
	* 1-637-625-11	DIODE BOARD	
		***********	
		‹ DIODE ›	
D901	8-719-302-38	DIODE RBV-602-01	

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Ref. No.	Part No.	Description	Remark
	* 1-637-614-11	HEADPHONE JACK BOARD	
		********************	
		‹ CAPACITOR ›	
C720	1-162-290-31	CERAMIC 470PF 10% 50V	
C721	1-162-290-31	CERAMIC 470PF 10% 50V	
		‹ JACK ›	
J721	1-565-327-11	JACK, LARGE TYPE 1P (PHONES)	

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Ref. No.	Part No.	Description	Remark
	* 1-637-613-11	HEADPHONE VOL BOARD	
		*******************	
		‹ VARIABLE RESISTOR ›	
RV302	1-238-841-11	RES, VAR, CARBON 20K/20K (PHONE LEVEL)	

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Ref. No.	Part No.	Description	Remark
	* 1-637-621-11	LINE FILTER BOARD	
		*****************	
	* 1-533-213-31	HOLDER, FUSE	
	4-870-539-00	PLATE, GROUND	
		‹ CAPACITOR ›	
C941	⚠1-161-744-00	CERAMIC 0.01uF 400V	
C942	⚠1-161-742-00	CERAMIC 0.0022uF 20% 400V	
C943	⚠1-161-742-00	CERAMIC 0.0022uF 20% 400V	
C944	⚠1-161-742-00	CERAMIC 0.0022uF 20% 400V	
C945	⚠1-161-742-00	CERAMIC 0.0022uF 20% 400V	
C946	⚠1-161-744-00	CERAMIC 0.01uF 400V	
		‹ CONNECTOR ›	
CN941	* 1-564-321-00	PIN, CONNECTOR 2P	
CN942	* 1-565-395-11	PIN, CONNECTOR 3P	
CN943	* 1-564-687-11	PIN, CONNECTOR 3P	
CN944	* 1-564-687-11	PIN, CONNECTOR 3P	
		‹ COIL ›	
T901	⚠1-421-915-11	COIL, LINE FILTER	

LINE PIN JACK | LOAD-MOT | LOAD-SW | MD

Ref. No.	Part No.	Description	Remark
	* 1-637-620-11	LINE PIN JACK BOARD	
		(CONNECTOR)	
CN151	* 1-564-519-11	PLUG, CONNECTOR 4P	
		(JACK)	
J151	1-568-101-11	JACK, PIN 4P (LINE IN/OUT)	
		(RESISTOR)	
R153	1-249-657-11	CARBON 220 5% 1/2W	
R154	1-249-657-11	CARBON 220 5% 1/2W	
	* 1-637-601-11	LOAD-MOT BOARD	
		(CAPACITOR)	
C011	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
		(CONNECTOR)	
CN001	* 1-564-497-11	PIN, CONNECTOR 4P	
CN002	* 1-564-496-11	PIN, CONNECTOR 3P	
CN054	* 1-564-523-11	PLUG, CONNECTOR 8P	
	* 1-637-606-11	LOAD-SW BOARD	
		(SWITCH)	
S011	1-571-489-11	SWITCH, SLIDE	
S012	1-571-489-11	SWITCH, SLIDE	
	* A-2006-382-A	MD BOARD, COMPLETE	
	4-352-844-01	PIN, LEAD, COATING	
		(JUMPER)	
JW1-JW41	1-216-296-00	METAL CHIP 0 5% 1/8W	
		(CAPACITOR)	
C001	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C002	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C003	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C004	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C005	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C006	1-124-126-00	ELECT 47uF 20% 10V	
C007	1-124-126-00	ELECT 47uF 20% 10V	
C021	1-124-925-11	ELECT 2.2uF 20% 100V	
C022	1-124-126-00	ELECT 47uF 20% 10V	
C031	1-124-126-00	ELECT 47uF 20% 10V	
C032	1-124-126-00	ELECT 47uF 20% 10V	
C033	1-124-126-00	ELECT 47uF 20% 10V	
		(CONNECTOR)	
CN003	* 1-564-505-11	PLUG, CONNECTOR 2P	
CN004	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
CN005	* 1-564-515-11	PLUG, CONNECTOR 12P	
CN006	* 1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P	
CN007	* 1-568-369-11	HOUSING, CONNECTOR (PC BOARD) 8P	
CN008	* 1-564-338-00	PIN, CONNECTOR 4P	
CN009	* 1-564-338-61	PIN, CONNECTOR 4P	
CN051	* 1-564-715-11	PIN, CONNECTOR (SMALL TYPE) 13P	
CN052	* 1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P	
CN053	* 1-564-507-11	PLUG, CONNECTOR 4P	
		(DIODE)	
D011	8-719-104-34	DIODE 1S2836	
D012	8-719-104-34	DIODE 1S2836	
		(IC)	
IC001	8-759-107-68	IC CX20115A	
IC002	8-759-502-80	IC LM358M	
		(TRANSISTOR)	
Q001	8-729-100-66	TRANSISTOR 2SC1623L6	
Q002	8-729-101-07	TRANSISTOR 2SB798-DL	
Q003	8-729-900-53	TRANSISTOR DTC114EK	
		(RESISTOR)	
R001	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R002	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R003	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R004	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R005	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R006	1-216-058-00	METAL GLAZE 2.4K 5% 1/10W	
R007	1-216-029-00	METAL CHIP 150 5% 1/10W	
R008	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R009	1-216-025-00	METAL CHIP 100 5% 1/10W	
R010	1-216-084-00	METAL GLAZE 30K 5% 1/10W	
R011	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R012	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R013	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R014	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R015	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R022	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MD **MOTOR** **T-END** **OPTICAL RECEIVE** **POWER**

Ref. No.	Part No.	Description				Remark
R023	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R024	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R025	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R031	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R032	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R033	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R034	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R035	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R036	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R037	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R038	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

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* 1-633-726-11 MOTOR BOARD
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〈 CAPACITOR 〉

C01	1-162-851-11	CERAMIC	0.1MF		16V	

〈 CONNECTOR 〉

CN01	* 1-564-336-00	PIN, CONNECTOR 2P	
CN02	* 1-564-336-61	PIN, CONNECTOR 2P	
CN03	* 1-564-498-11	PIN, CONNECTOR 5P	

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* 1-637-603-11 T-END BOARD
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〈 TRANSISTOR 〉

Q011	1-808-957-11	TRANSISTOR PHOTO SENSOR

****

* 1-637-609-11 OPTICAL RECEIVE BOARD
****

〈 CAPACITOR 〉

C718	1-124-779-00	ELECT CHIP	10uF	20%	16V

〈 IC 〉

IC711	8-749-920-59	IC A1QH3020S

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* A-2006-344-A POWER BOARD, COMPLETE
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* 1-533-213-31 HOLDER, FUSE
* 1-568-130-11 BAR, BUS 3P

Ref. No.	Part No.	Description				Remark

〈 CAPACITOR 〉

C901	1-126-016-11	ELECT	4700uF	20%	16V	
C902	1-126-016-11	ELECT	4700uF	20%	16V	
C903	1-124-999-11	ELECT	2200uF	20%	10V	
C904	1-124-994-11	ELECT	100uF	20%	10V	
C905	1-124-473-11	ELECT	1000uF	20%	10V	
C906	1-124-473-11	ELECT	1000uF	20%	10V	
C907	1-126-059-11	ELECT	10uF	20%	50V	
C908	1-126-016-11	ELECT	4700uF	20%	16V	
C909	1-126-016-11	ELECT	4700uF	20%	16V	
C910	1-124-473-11	ELECT	1000uF	20%	10V	
C911	1-126-066-11	ELECT	470uF	20%	63V	
C912	1-126-052-11	ELECT	100uF	20%	50V	
C913	1-126-052-11	ELECT	100uF	20%	50V	
C914	1-136-165-00	FILM	0.1uF	5%	50V	
C915	1-136-165-00	FILM	0.1uF	5%	50V	
C991	1-126-129-11	ELECT	6800uF	20%	35V	
C992	1-126-129-11	ELECT	6800uF	20%	35V	
C993	1-136-165-00	FILM	0.1uF	5%	50V	
C994	1-136-177-00	FILM	1uF	5%	50V	
C995	1-136-165-00	FILM	0.1uF	5%	50V	
C996	1-136-177-00	FILM	1uF	5%	50V	

〈 CONNECTOR 〉

CN901	* 1-564-506-11	PLUG, CONNECTOR 3P
CN902	* 1-564-506-11	PLUG, CONNECTOR 3P
CN903	* 1-564-506-11	PLUG, CONNECTOR 3P
CN904	* 1-564-507-11	PLUG, CONNECTOR 4P
CN991	* 1-560-061-00	PIN, CONNECTOR 3P
CN992	* 1-560-062-00	PIN, CONNECTOR 4P
CN993	* 1-560-063-00	PIN, CONNECTOR 5P
CN994	* 1-560-061-00	PIN, CONNECTOR 3P

〈 DIODE 〉

D903	8-719-200-77	DIODE 10E2N
D904	8-719-200-77	DIODE 10E2N
D905	8-719-107-94	DIODE 1SS202-1
D906	8-719-107-94	DIODE 1SS202-1
D907	8-719-107-94	DIODE 1SS202-1
D908	8-719-230-02	DIODE 30DF2
D909	8-719-230-02	DIODE 30DF2
D910	8-719-200-77	DIODE 10E2N
D991	8-719-210-30	DIODE F10P20F(R)
D992	8-719-210-38	DIODE F10P20FR

〈 RESISTOR 〉

FR901	⚠1-219-137-11	FUSIBLE	0.33	10%	1/4W	
FR902	⚠1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
FR904	⚠1-212-865-00	FUSIBLE	22	5%	1/4W	F
FR905	⚠1-212-865-00	FUSIBLE	22	5%	1/4W	F

POWER | PUSH SW | REC VOL | S-END
S-SW | SLIDE-SW | SW (IN) | SW (OUT)

Ref. No.	Part No.	Description				Remark
		‹ TRANSISTOR ›				
Q901	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q902	8-729-111-55	TRANSISTOR 2SD1312-K				
		‹ RESISTOR ›				
R901	1-249-425-11	CARBON	4.7K	5%	1/4W	
R902	1-249-417-11	CARBON	1K	5%	1/4W	
R903	1-249-425-11	CARBON	4.7K	5%	1/4W	
R904	1-249-437-11	CARBON	47K	5%	1/4W	
R905	1-247-887-00	CARBON	220K	5%	1/4W	
R907	1-249-409-11	CARBON	220	5%	1/4W	
		‹ THERMISTOR ›				
TH903	1-806-882-11	THERMISTOR (POSITIVE)				
THP901	1-808-065-11	THERMISTOR, POSITIVE				
THP902	1-808-065-11	THERMISTOR, POSITIVE				
		‹ ZENER DIODE ›				
ZD901	8-719-914-12	DIODE HZ4BLL				
ZD902	8-719-934-25	DIODE HZS33-1LT2				
ZD903	8-719-933-33	DIODE HZS6A1LT2				

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* 1-637-610-11 PUSH SW BOARD
****

Ref. No.	Part No.	Description	Remark
		‹ CONNECTOR ›	
CN778	* 1-564-337-00	PIN, CONNECTOR 3P	
		‹ SWITCH ›	
S747	1-554-118-00	SWITCH, PUSH (1 KEY) (REC MODE)	
S750	1-554-118-00	SWITCH, PUSH (1 KEY) (REC MONITOR)	

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* 1-637-615-11 REC VOL BOARD
****

Ref. No.	Part No.	Description				Remark
	1-136-165-00	FILM	0.1MF	5%	50V	
		‹ RESISTOR ›				
R101	1-249-459-11	CARBON	12K	5%	1/4W	
R102	1-249-461-11	CARBON	18K	5%	1/4W	
R201	1-249-459-11	CARBON	12K	5%	1/4W	
R202	1-249-461-11	CARBON	18K	5%	1/4W	
		‹ VARIABLE RESISTOR ›				
RV301	1-241-360-11	RES, VAR, CARBON 50K/50K (REC LEVEL)				

****

* 1-637-602-11 S-END BOARD
****

Ref. No.	Part No.	Description	Remark
		‹ CONNECTOR ›	
CN055	* 1-564-518-11	PLUG, CONNECTOR 3P	
		‹ TRANSISTOR ›	
Q012	1-808-957-11	TRANSISTOR PHOTO SENSOR	

****

* 1-637-604-11 S-SW BOARD
****

Ref. No.	Part No.	Description	Remark
		‹ SWITCH ›	
S014	1-572-458-11	SWITCH, PUSH	

****

* 1-637-608-11 SLIDE SW BOARD
****

Ref. No.	Part No.	Description				Remark
		‹ RESISTOR ›				
R807	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R808	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
		‹ SWITCH ›				
S746	1-516-781-XX	SWITCH, SLIDE (INPUT MODE)				
S749	1-516-781-XX	SWITCH, SLIDE (TIMER)				

****

* 1-633-727-11 SW (IN) BOARD
****

Ref. No.	Part No.	Description	Remark
		‹ SWITCH ›	
S11	1-572-247-11	SWITCH, SLIDE	

****

* 1-633-728-11 SW (OUT) BOARD
****

Ref. No.	Part No.	Description	Remark
		‹ SWITCH ›	
S12	1-570-975-11	SWITCH, SLIDE	

****

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

T-SW | TRANSISTOR (A) | TRANSISTOR (B) | TRANSISTOR (C)

Ref. No.	Part No.	Description	Remark
	* 1-637-605-11	T-SW BOARD	
		**********	
		(SWITCH)	
S015	1-572-459-11	SWITCH, PUSH	

****

Ref. No.	Part No.	Description	Remark
	* 1-637-622-11	TRANSISTOR (A) BOARD	
		********************	
		(CAPACITOR)	
C931	9-831-246-50	WIRE KIT 1uF 10% 50V	
		(TRANSISTOR)	
Q931	8-729-111-55	TRANSISTOR 2SD1312-K	

****

Ref. No.	Part No.	Description	Remark
	* 1-637-623-11	TRANSISTOR (B) BOARD	
		********************	
		(CAPACITOR)	
C932	1-164-159-11	CERAMIC 0.1uF	50V
C933	1-164-159-11	CERAMIC 0.1uF	50V
		(IC)	
IC901	8-759-148-79	IC uPC2406HF	

****

Ref. No.	Part No.	Description	Remark
	* 1-637-624-11	TRANSISTOR (C) BOARD	
		********************	
		(CAPACITOR)	
C934	1-164-159-11	CERAMIC 0.1uF	50V
C935	1-164-159-11	CERAMIC 0.1uF	50V
		(IC)	
IC902	8-759-144-82	IC uPC2405HF	

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		*************	
111	⚠1-559-479-11	CORD, POWER (US)	
	⚠1-575-912-11	CORD, POWER (AEP)	
	⚠1-575-913-11	CORD, POWER (UK)	
BATT01	1-528-229-11	BATTERY, LITHIUCR-2450	
FH901	1-532-745-11	FUSE, GLASS TUBE (3.15A 125V) (US)	
	⚠1-532-237-00	FUSE, TIME-LAG (T3.15A 250V) (AEP, UK)	
FH902	⚠1-532-203-00	FUSE, TIME-LAG (T2A 250V) (AEP, UK)	
	⚠1-532-743-11	FUSE, GLASS TUBE (2A, 125V) (US)	
FH903	⚠1-532-203-00	FUSE, TIME-LAG (T2A 125V) (AEP, UK)	
	⚠1-532-743-11	FUSE, GLASS TUBE (2A, 250V) (US)	
FH941	⚠1-532-743-11	FUSE, GLASS TUBE (2A, 125V) (US)	
	⚠1-532-203-00	FUSE, TIME-LAG (T2A 250V) (AEP, UK)	
M902	8-835-306-01	MOTOR, DC U-17A	
M905	* 8-835-205-01	MOTOR, DC U-2A	
MOT011	A-2003-660-A	MOTOR ASSY	
MOT012	A-2003-448-A	MOTOR ASSY	
PL701	1-518-664-11	LAMP, PILOT	
PL702	1-518-664-11	LAMP, PILOT	
PM002	1-454-522-11	SOLENOID, PLUNGER	
PT901	⚠1-450-450-11	TRANSFORMER, POWER (D) (US)	
	⚠1-450-603-11	TRANSFORMER, POWER (AEP, UK)	
PT902	⚠1-450-449-11	TRANSFORMER, POWER (A) (US)	
	⚠1-450-604-11	TRANSFORMER, POWER (A) (AEP, UK)	
S901	⚠1-554-920-11	SWITCH, PUSH (AC POWER) (1 KEY)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

****

Ref. No.	Part No.	Description	Remark
		ACCESSORY & PACKING MATERIAL	
		****************************	
	1-465-642-11	REMOTE COMMANDER (RM-D77A)...(BLACK)	
	1-465-823-11	REMOTE COMMANDER (RM-D77A/D)...(GOLD)	
	1-590-861-11	CORD, CONNECTION	
	* 3-369-153-01	INDIVIDUAL CARTON (87ES)	
	* 3-370-205-01	INDIVIDUAL CARTON (77ES)	
	3-703-450-01	INSTRUCTION (87ES)	
	3-704-366-01	SCREW (CASE) (M3X8) (BLACK) (US, AEP)	
	3-704-366-11	SCREW (CASE) (M3X8) (GOLD)	
	3-707-584-01	COVER, BATTERY (for RM-D77A, RM-D77A/D)	
	3-752-666-11	MANUAL, INSTRUCTION (AEP, UK) (ENGLISH, FRENCH, SPANISH, PORTUGUESE)	
	3-752-666-21	MANUAL, INSTRUCTION (US) (ENGLISH)	
	3-752-666-41	MANUAL, INSTRUCTION (AEP) (GERMAN, DUTCH, SWEDISH, ITALIAN)	
	* 4-936-624-01	CUSHION	

****

HARDWARE LIST

Ref. No.	Part No.	Description
#2	7-682-548-09	SCREW +BVTT 3X8 (S)
#3	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S
#4	7-621-773-86	SCREW +B 2.6X4
#5	7-682-560-04	SCREW +BVTT 4X6 (S)
#6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#7	7-682-548-04	SCREW, TIGHT, S
#8	7-621-771-06	SCREW, LOCK
#9	7-682-147-15	SCREW, TR
#10	7-621-772-10	SCREW +B 2X4
#11	7-688-001-01	W 2, SMALL

Ref. No.	Part No.	Description	Remark
#12	7-682-545-09	SCREW +B 3X4	
#13	7-621-772-00	SCREW +B 2X3	
#14	7-688-001-12	W 2, MIDDLE	
#15	7-621-775-08	SCREW +B 2.6X3	
#16	7-621-255-45	SCREW +P 2X6	
#17	7-627-852-28	+P 1.7X3	
#18	7-621-772-08	SCREW +B 2X3	
#19	7-628-253-00	SCREW +PS 2X4	
#20	7-627-553-27	SCREW, PRECISION +P 2X2.5	
#21	7-627-553-67	SCREW, PRECISION +P 2X5	
#22	7-621-772-20	SCREW +B 2X5	
#23	7-627-450-78	SCREW, PRECISION +K 1.7X4	
#24	7-627-552-47	SCREW, PRECISION +P 1.7X4	
#25	7-621-759-35	+PSW, 2.6X5	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

English
91D0580-1
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Audio Group
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SONY

SERVICE MANUAL

US Model
DTC-87ES

AEP Model
UK Model
DTC-77ES

CORRECTION-1

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT				CORRECT			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
70	21	3-704-366-11	SCREW (CASE) (M3X8) ......(GOLD)		21	4-924-242-01 ☛	SCREW (M3X6) FLAT HEAD ☛ ......(GOLD)	

9-956-300-91

Sony Corporation
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English
9110581-1
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DTC-77ES/87ES

SONY®
SERVICE MANUAL

US Model
DTC-87ES
AEP Model
UK Model
DTC-77ES

CORRECTION-2

Correct your service manual as shown below.

____ (Under line) : indicates corrected portion.

Page	INCORRECT			CORRECT		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
76	312	3-701-437-01	SHEET (CATCHER)	312	3-364-033-01	SHEET (CATCHER)

(SPM-95058)

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